• 16B0901B1 •

Remote Drive

DRIVE REMOTE CONTROL

USER MANUAL

Upd. 3/01/07
R. 07

English

• This manual is integrant and essential to the product. Carefully read the instructions contained herein as they provide important hints for use and maintenance safety.
• The software described in this manual is a tool helping drive control. Elettronica Santerno is not responsible for any direct and/or consequential damages due to the implementation of the Remote Drive.
• Elettronica Santerno reserves the right to make any technical changes to this manual and to the device without prior notice. If printing errors or similar are detected, the corrections will be included in the new releases of the manual.
• Elettronica Santerno is responsible for the information contained in the original version of the Italian manual.
• The information contained herein is the property of Elettronica Santerno and cannot be reproduced. Elettronica Santerno enforces its rights on the drawings and catalogues according to the law.

ELETTRONICA
SANTERNO

Elettronica Santerno S.p.A.
Via G. Di Vittorio, 3 - 40020 Casalfiumanese (BO) Italia
Tel. +39 0542 668611 - Fax +39 0542 668600
www.elettronicasanterno.it sales@elettronicasanterno.it

0. TABLE OF CONTENTS

0. Table of Contents **2**
1. DEVICE OVERVIEW **6**
1.1. General 6
2. SPECIFICATIONS **7**
2.1. Minimum Hardware and Software Required 7
2.1.1. Hardware 7
2.1.2. Software 7
2.2. Standard Supply 7
2.3. Operating Modes 7
2.3.1. Local Connection 8
2.3.2. Remote Connection via the LAN Between 2 Computers 8
2.3.3. Remote Connection via LAN and the Internet Between 2 Computers 8
2.3.4. Remote Modem Connection via the Telephone Line and the Internet between 2 Computers 8
2.3.5. Remote Point–to–point Connection via Modem between 2 Computers 8
2.3.6. Remote Connection via the LAN between the Computer and the Drive Implementing ES851 9
2.3.7. Remote Modem Connection via the Telephone Line between the Computer and the Drive Implementing ES851 9
3. HARDWARE INSTALLATION – WIRING **10**
3.1. Connecting to Sinus K 10
3.2. Connecting to Sinus Penta 10
3.3. Connecting to Sinus K / Sinus Penta – Using ES822 Board 11
3.4. Connecting to Sinus IFD, Sinus VTC and Sinus Lift 12
3.5. Connecting to DCREG – Using ES733 Board 12
3.6. Connecting to SFTM 14
3.7. Connecting to ASA, ASAC0 and ASAC1 14
3.8. Connecting to ASAMV 14
3.9. Connecting to Vega Drive and Sinus M Inverters 15
3.10. Connecting to Orion Drive and Sinus N Inverters 15
3.11. Connecting to DBU 16
3.12. Connecting to IPL 17
3.13. Connecting to Plants Implementing ES851 Data Logger 18
3.13.1. Local Connections 18
3.13.2. Remote Connections 19
3.14. Connection Kits 20
3.14.1. Connection Kits for Plants Implementing ES851 21
3.15. General Notes 22
4. INSTALLING THE SOFTWARE – CONNECTING PROCEDURES **23**
4.1. Local Connection 23
4.2. REMOTE Connection (Slave) 24
4.3. REMOTE Connection (MASTER) 25
4.4. Reversed REMOTE Connection 26
4.4.1. Reversed REMOTE Connection (MASTER) 26
4.4.2. Reversed REMOTE Connection (SLAVE) 28
5. USER INTERFACE **29**
5.1. Main Window 29
5.1.1. New Project 29
5.1.2. Load Project 29
5.1.3. Firmware Upgrading 29
5.2. Language Selection 30
5.3. Selecting the Connection Type 31
5.3.1. Connection Parameters 31
5.3.1.1. Mode 31
5.3.1.2. Connection Type 32
5.3.1.3. Remote Host Address 32
5.3.1.4. TCP/IP Port 32

5.3.1.5. Remote Timeout 32
5.3.1.6. Button 32
5.3.1.7. First Connect to 32
5.3.2. Serial Port Parameters 33
5.3.2.1. Device Port 33
5.3.2.2. Computer Port 34
5.3.2.3. Baud Rate 34
5.3.2.4. Parity 34
5.3.2.5. Interm. Delay 34
5.3.2.6. Timeout 34
5.3.2.7. Scan Timeout 34
5.3.3. IP Local Address 34
5.3.4. Operator Sheet 34
5.3.5. User Sheet 35
5.3.6. Lum. Pan. Serial Port Parameters 35
5.3.6.1. Protocol 35
5.3.6.2. Port 35
5.3.6.3. Baud Rate 35
5.3.6.4. Parity 36
5.3.6.5. Stop Bits 36
5.3.6.6. Char. N. per Line 36
5.3.7. Remote Access Configuration 36
5.3.7.1. Connection List Menu 36
5.4. CHAT Window 38
5.5. Project Window 39
5.5.1. Elements of the Tree List: 40
5.5.2. Parameter Sheet 40
5.5.3. Measure Sheet 41
5.5.3.1. Measure Panel 41
5.5.3.2. State Display Panel 42
5.5.3.3. Panel for Device State Display 42
5.5.3.4. Remote Console Panel 42
5.5.3.5. Graph Panel and Acquisition Table 43
5.5.3.6. Measure Panel with Custom Properties 45
5.5.3.7. Output Parameters to Luminous Panel 47
5.5.3.8. Panel for Log Upload from ES851 47
5.5.3.9. Panel for Log Download from ES851 48
5.6. File Menu 49
5.6.1. New Device 50
5.6.2. Device Scanning 50
5.6.3. New Parameter Sheet 51
5.6.4. New Parameter 52
5.6.5. Load Project 52
5.6.6. Load Device 52
5.6.7. Load Parameter Sheet 52
5.6.8. Save Project 52
5.6.8.1. Save All 52
5.6.8.2. Save Sel. 52
5.6.8.3. Save No Default 52
5.6.8.4. Save Sel. No Default 52
5.6.9. Save Device 53
5.6.10. Save Parameter Sheet 53
5.6.11. Parameter Version Updating 53
5.6.12. Refresh Firmware 53
5.6.13. Rename 53
5.6.14. Change Address 53
5.6.15. Delete 53
5.6.16. Parameter Sorting 53

5.7. Parameters Menu 54
5.7.1. Read All....54
5.7.2. Write All 54
5.7.3. Save All 54
5.7.4. Read Selected 54
5.7.5. Write Selected....54
5.7.6. Save Selected....54
5.7.7. Write Modified 54
5.7.8. Save Modified....54
5.7.9. Error Control While Reading or Writing Parameter Sets 55
5.8. Print Menu 56
5.8.1. Print All 56
5.8.2. Print Non-Default Parameters 57
5.8.3. Print Selection 57
5.8.4. Print Non-Default Selection....57
5.8.5. Print Different from File *.prj 58
5.9. Acquisition General Settings Window Menu 59
5.9.1. Setting List 60
5.9.1.1. Cod. 60
5.9.1.2. Name 60
5.9.1.3. ActiveAcq. 60
5.9.1.4. SaveActive 60
5.9.1.5. T.Acq(s.) 60
5.9.1.6. Aver.T.(s.) 60
5.9.1.7. Sav.T.(m.) 60
5.9.1.8. File Name 60
5.9.2. Change Settings....60
5.9.3. Saving Folder Settings 61
5.9.4. Reset Commands....61
5.9.4.1. Reset Acq.Buffers 61
5.9.4.2. Delete Acq. Files 61
5.10. Chat Menu 61
5.11. Tools Menu....62
5.11.1. ModBus Test 62
5.11.2. Command Executer....62
5.12. Configuration Menu 63
5.12.1. Options Window....63
5.13. Data Menu 66
5.13.1. Graph Window....66
5.13.2. Graph Settings Window....67
5.13.3. Acquired Data Display Window 67
5.14. Activity Tracker Menu 68
5.15. Window Menu 69
5.16. Help Menu....69
5.17. Print Preview Window for Acquired Data....70
5.18. Acquisition Saving Settings Window....71
5.18.1. Enabled....71
5.18.2. Average Every:....71
5.18.3. Save to File Every: 71
5.18.4. File Name: 71
5.19. Parameter Updating Window....72
5.20. Device Firmware Upgrade Window....74
5.20.1. Download procedure for DC type devices - DCREG (DC) 75
5.20.2. Download Procedures for IPL (IP) Equipment, Sinus Penta (PD) Drive and Relevant Applications (Px) 76
5.21. Parameter Print Preview Window....77
6. O.S. CONFIGURATION FOR A CONNECTION TO EACH TERMINAL.... 78
6.1. Windows 98 78

6.1.1. Client: 78
6.1.2. Server: 80
6.2. Windows XP 82
6.2.1. Client: 82
6.2.2. Server: 82

1. DEVICE OVERVIEW

1.1. General

The Remote Drive is a software application running on Windows™ operating system. It is capable of managing all Elettronica Santerno's devices dialoguing with MODBUS protocol with serial standards RS232, RS422 or RS485.
The great adaptability of the Remote Drive allows you to rapidly and efficiently set and store to file the whole set of the device parameters, its remote control and the possible upgrading of its firmware.
The application is also capable of acquiring and graphically representing all quantities detected by the device. The quantities detected will be then saved to file.

This manual refers to the Remote Drive software version 2.12, allowing to control the following devices:

Device	Latest SW version	Identifier
ASAC0 / ASAC1		AC000
ASA	5	AS200
ASAMV	6.86	AV686
DBU	35.04	DB000
DCREG	4.01	DC401
Data Logger	1.65x	DL165X
Sinus IFD	3.03	IF303
Sinus K – IFD SW	2.05x	IK205X
IPL	1.03x	IP103X
Sinus K – LIFT SW	1.40x	LK140X
Sinus LIFT	2.02	LT202
Orion Drive	1.9	OD109
Sinus Penta – Basic SW	1.65x	PD165X
Sinus Penta – Multipump SW	1.65x	PM165X
Sinus Penta – Regenerative SW	1.65x	PR165X
SFTM	4.12	SF412
Vega Drive	5.4E	VD504
Sinus K – SW VTC	2.05x	VK205X
Sinus M	EU1.7	VM017
Sinus N	1.9	VN019
Sinus VTC	2.04	VT204

For the description of the MODBUS protocol, the list of the parameters that can be exchanged and the relevant addresses, please refer to the MODBUS User Manual (if available) or to the User Manual of the device being used.

NOTE To handle previous versions of the devices stated in the table above, use the configuration files stored to the \Devices folder of the Remote Drive software.

NOTE Greater SW versions for the devices stated in the table above or other devices manufactured by Elettronica Santerno may be handled by simply adding a configuration file for each version to the Remote Drive \Devices folder. Configuration files can be downloaded from http://www.elettronicasanterno.it or can be requested to Elettronica Santerno's Technical Service.

2. SPECIFICATIONS

2.1. Minimum Hardware and Software Required

The hardware and software required are the same as those needed for a standard computer capable to be connected to the Internet.

2.1.1. HARDWARE

- PC Pentium 100 or greater.
- RAM: minimum 16 Mb.
- CD–ROM Player.
- 1 RS232 serial port or 1 USB port.
- Video card and Monitor capable of supporting 800x600 resolution display or higher.
- Modem or network card (for remote connection only).

2.1.2. SOFTWARE

- Operating system: Windows™ 95 (Vers.B), 98, Me, NT4, 2000, XP.
- Internet Explorer 4.00 or higher installed.

2.2. Standard Supply

The Remote Drive is supplied on a CD–ROM containing an installation wizard to install the application on your hard disk. To install the application, click the SETUP icon and follow the instructions displayed.

2.3. Operating Modes

The application supports two operating modes: Local mode and Remote mode.

In *"Local"* mode, your computer is connected directly to the device.

In "*Remote*" mode, the following options are available:

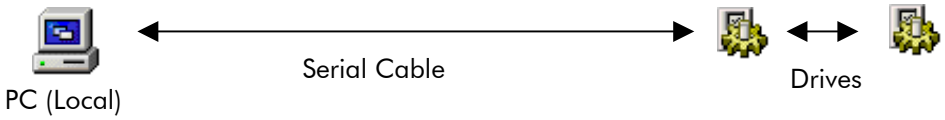
1. Two computers can connect to each other in remote mode via the telephone line, the LAN or the Internet. The Remote Drive must be implemented and running on both computers. The drive must be connected to the serial port of one computer (which is the slave device), whereas the other computer is the master. The master uses the slave computer to control the equipment and is capable of exploiting any functionality as if the equipment was connected to the master computer's serial port.
2. When the Remote Drive is running on a computer, it can be connected to the equipment where ES851 Data Logger board is installed. The computer will be connected as a master via the telephone line or the LAN to ES851, which can operate as a server. In that way, the Remote Drive allows to monitor ES851 Data Logger and the equipment connected to the card itself.

The remote connection uses Winsock services based on TCP/IP protocol. The communication process consists of TCP and UDP packages using the port stated for the connection parameters (see TCP/IP Port).

While connected, a chat window is also displayed for the users of the two computers.

Connecting examples are given below.

2.3.1. LOCAL CONNECTION

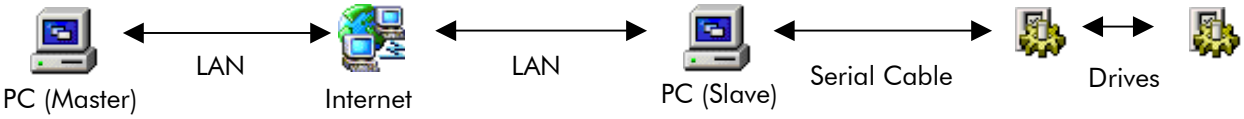


The computer is connected directly to the device by means of an RS232 serial cable or an RS232/RS485 adapter. If ES851 Data Logger is installed on the drive, the local connection is made possible through the serial ports in ES851 (RS232 or RS485 ports) or through the Ethernet port in ES851 and a crossed-over Ethernet cable.

2.3.2. REMOTE CONNECTION VIA THE LAN BETWEEN 2 COMPUTERS

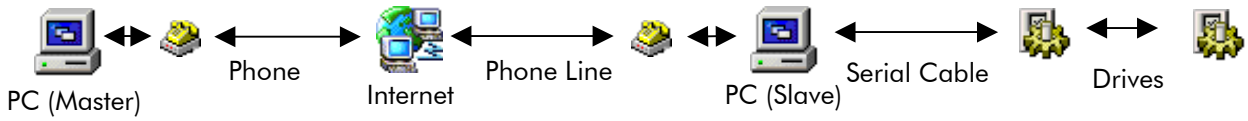
Your local area network must support the TCP/IP protocol.

2.3.3. REMOTE CONNECTION VIA LAN AND THE INTERNET BETWEEN 2 COMPUTERS



Internet allows the remote control of long–distance connections at a relatively low cost.
If you access the Internet through a Firewall or a Proxy server, remember to enable the port used for the Remote Drive.

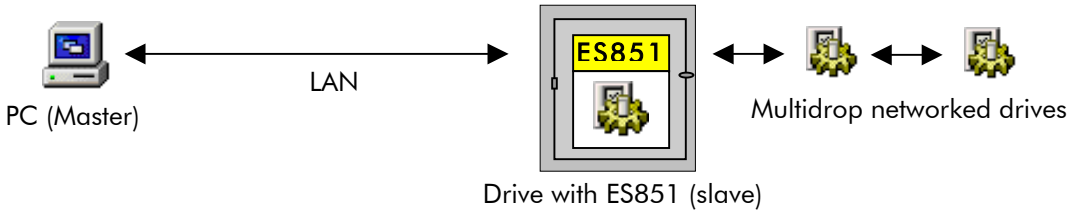
2.3.4. REMOTE MODEM CONNECTION VIA THE TELEPHONE LINE AND THE INTERNET BETWEEN 2 COMPUTERS



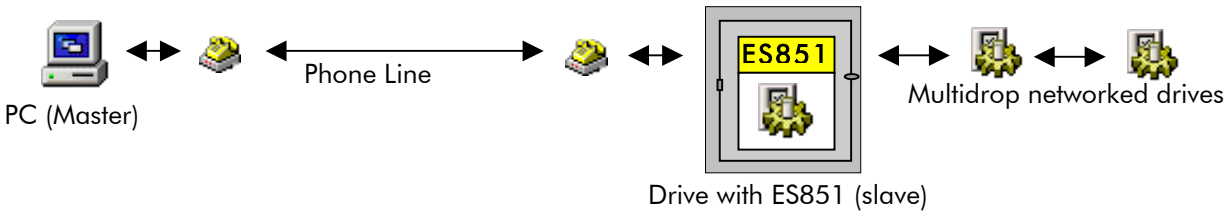
2.3.5. REMOTE POINT–TO–POINT CONNECTION VIA MODEM BETWEEN 2 COMPUTERS

If the connection to the Internet is too slow or is not available, you can use this type of connection (see section O.S. Configuration for a Connection to Each Terminal).
The Remote Access Server is to be enabled on the computer called via your modem.

2.3.6. REMOTE CONNECTION VIA THE LAN BETWEEN THE COMPUTER AND THE DRIVE IMPLEMENTING ES851



2.3.7. REMOTE MODEM CONNECTION VIA THE TELEPHONE LINE BETWEEN THE COMPUTER AND THE DRIVE IMPLEMENTING ES851



3. HARDWARE INSTALLATION – WIRING

3.1. Connecting to Sinus K

For the connection to the serial link, use the CN8 connector located in ES778 control board for sizes S05..S15, or use the connector located in the lower part of the inverter near the terminal board for sizes ≥ S20. This is a 9–pole, male D connector having the following features:

Pins	Function
1 – 3	(TX/RX +) Differential input/output + (bidirectional). Positive polarity with respect to pins 2 – 4 for one MARK.
2 – 4	(TX/RX –) Differential input/output – (bidirectional). Negative polarity with respect to pins 1 – 3 for one MARK.
5	(GND) Ground of differential signals and RS232–RS485 adapter power supply (when used).
6 – 7 – 8	Not connected.
9	+5V for RS232–RS485 adapter power supply (when used).

SW1 selectors 1 and 2: ON = TERMINATION and BIAS ON
OFF = TERMINATION and BIAS OFF

You can use the special kit supplied to connect the computer to the inverter. The kit includes an RS232–RS485 or a USB–RS485 adapter box and the relevant cable ("SINUS" connector) (see Connection Kits).

3.2. Connecting to Sinus Penta

As for Sinus Penta, connection to the serial link is made through connector **CN8** located on ES821 control board for sizes S05..S15, or through the connector located in the lower part of the inverter near the terminal board for sizes ≥ S20. This is a 9–pole, male D connector having the following features:

Pins	Function
1 – 3	(TX/RX +) Differential input/output + (bidirectional). Positive polarity with respect to pins 2 – 4 for one MARK.
2 – 4	(TX/RX –) Differential input/output – (bidirectional). Negative polarity with respect to pins 1 – 3 for one MARK.
5	(GND) Ground of differential signals and RS232–RS485 adapter power supply (when used).
6	(VTEST) Input for test power – do not connect.
7 – 8	Not connected.
9	+5V for RS232–RS485 adapter power supply (when used).

SW3 selectors 1 and 2: ON = TERMINATION and BIAS ON
OFF = TERMINATION and BIAS OFF

You can use the special kit supplied to connect the computer to the drive. The kit includes an RS232–RS485 or a USB–RS485 adapter box and the relevant cable ("SINUS" connector) (see Connection Kits).

3.3. Connecting to Sinus K / Sinus Penta – Using ES822 Board

ES822 Serial board allows to connect inverters of the Sinus K series and Sinus Penta drives through a galvanically isolated interface. We suggest that ES822 board be used to avoid ground loop and possible interface electrical noise. ES822 is provided with an RS485 connector and an RS232 connector for a point–to–point connection to a computer or a device with an RS232 serial interface.
Insert ES822 board to Sinus K and Sinus Penta inverters to automatically disable the serial interface connectors located on ES822 (**CN8** and **CN9** respectively).
Jumper **J1** on ES822 board allows to select either the RS485 connector (**CN3**) or the RS232 connector (**CN2**).

The RS485 connector is a 9–pole, male D connector having the following features:

Pins	Function
1 – 3	(TX/RX +) Differential input/output + (bidirectional). Positive polarity with respect to pins 2 – 4 for one MARK.
2 – 4	(TX/RX –) Differential input/output – (bidirectional). Negative polarity with respect to pins 1 – 3 for one MARK.
5 – 8	(GND) Ground of differential signals (insulated from the control board) and RS232–RS485 adapter power supply (when used).
6 – 8	Not connected.
9	+5V 100mA max. for RS232–RS485 adapter power supply (when used).

SW1 selectors 1 and 2: ON = TERMINATION and BIAS ON
OFF = TERMINATION and BIAS OFF

The RS232 connector is a 9–pole, female (DTE) D connector having the following features:

Pins	Function
1 – 9	Not connected.
2	(TX) Output according to the RS232 standard.
3	(RX) Input according to the RS232 standard.
5	(GND) Ground of TX and RX signals (insulated from the control board).
4 – 6	Linked together for DTR–DSR loopback.
7 – 8	Linked together for RTS–CTS loopback.

Three–wire RS232 is implemented. Handshaking hardware signal control is not implemented.
A connection wire of max. 3 m in length is allowed for RS232 interface. No terminator is allowed.
Use a modem cable (not crossed) to connect your computer to RS232 port.

3.4. Connecting to Sinus IFD, Sinus VTC and Sinus Lift

For the connection to the serial link, use the K5 connector located in ES696 control board. This is a 9–pole, male D connector having the following features:

Pins	Function
1	(TX/RX +) Differential input/output + (bidirectional).
2	Positive polarity with respect to pin 2 for one MARK.
3	(TX/RX –) Differential input/output – (bidirectional).
4	Negative polarity with respect to pin 1 for one MARK.
5	(GND) Ground of differential signals and RS232–RS485 adapter power supply (when used).
3 – 4 – 6 – 7 – 8	Not connected.
9	+5V for RS232–RS485 adapter power supply (when used).

J2: A = TERMINATION and BIAS ON
B = TERMINATION and BIAS OFF

J3: A = TERMINATION and BIAS ON
B = TERMINATION and BIAS OFF

You can use the special kit supplied to connect the computer to the inverter. The kit includes an RS232–RS485 or a USB–RS485 adapter box and the relevant cable ("SINUS" connector) (see Connection Kits).

3.5. Connecting to DCREG – Using ES733 Board

NOTE ES733 option board is to be used for a serial link.

Plug the ES733 Board into connector **CN7** of ES800 control board and use the three nylon fasteners to fix it. Also set the jumpers listed below. ES733 board includes two connectors for the control of different electrical standards:

CN2: RS422 (full duplex) / RS485 (half duplex) (set JP1, JP2 and JP3) 9–pole, female connector

Pins	Function	
1	GND	
2	not connected	
3	RX+ if RS422 is used (full duplex / 4–wire)	TX/RX+ if RS485 is used (half duplex / 2–wire)
4	TX+ if RS422 is used (full duplex / 4–wire)	not connected if RS485 is used (half duplex / 2–wire)
5	GND	
6	+5V	
7	not connected	
8	RX– if RS422 is used (full duplex / 4–wire)	TX/RX– if RS485 is used (half duplex / 2–wire)
9	TX– if RS422 is used (full duplex / 4–wire)	not connected if RS485 is used (half duplex / 2–wire)

CN3: RS232 (set JP3) 9–pole, male connector

Pins	Function
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

JP1: 1–2 = RS485 (half duplex / 2–wire)
2–3 = RS422 (full duplex / 4–wire)

JP2: 1–2 = SWAP TX/RX (if RS485 is used, the transmitter and receiver are alternatively enabled)
2–3 = ECHO ON (if RS485 is used, the receiver is always enabled)

JP3: 1–2 = RS232
2–3 = RS422/RS485

JP4: 1–2 = BIAS ON
2–3 = BIAS OFF

JP5: 1–2 = TERMINATION ON
2–3 = TERMINATION OFF

JP6: 1–2 = BIAS ON
2–3 = BIAS OFF

L1: TX (LED)

L2: RX (LED)

For the connection between the computer and the drive to RS485 or RS422 (**CN3**) port, you can use the kit supplied. This includes an RS232–RS485 or a USB–RS485 adapter box and the relevant cable ("DCREG" connector) (see Connection Kits).
For the connection to RS232 (**CN2**) port, use a null–modem cable (crossed–over cable).

3.6. Connecting to SFTM

For the connection to the serial link, use the K3 connector located in ES600 control board. This is a 9–pole, male D connector having the following features:

Pins	Function
1	(TX/RX +) Differential input/output + (bidirectional). Positive polarity with respect to pin 2 for one MARK.
2	(TX/RX –) Differential input/output – (bidirectional). Negative polarity with respect to pin 1 for one MARK.
3	(TX_AUX) – do not connect
5	(GND) Ground of differential signals and RS232–RS485 adapter power supply (when used).
4 – 6 – 7 – 8	Not connected.
9	+5V for RS232–RS485 adapter power supply (when used).

You can use the special kit supplied to connect the computer to the inverter. The kit includes an RS232–RS485 or a USB–RS485 adapter box and the relevant cable ("SINUS" connector) (see Connection Kits).

3.7. Connecting to ASA, ASAC0 and ASAC1

For the connection to the serial link, use terminals B1(–) and B3(+) located on the device front part (ASA) or terminals B1(–) and B3(+) located in the lower part of the optional module (ASAC0 and ASAC1).

NOTE The optional module must be used for the serial link to ASAC0 and ASAC1.

Term.	Function
B1(–)	Differential input/output – (bidirectional). Negative polarity with respect to B3(+) for one MARK.
B3(+)	Differential input/output + (bidirectional). Positive polarity with respect to B1(–) for one MARK.

You can use the special kit supplied to connect the computer to the inverter. The kit includes an RS232–RS485 or a USB–RS485 adapter box and the relevant cable (terminals (–) and (+). (see Connection Kits). Also, connect the box to the external 230 VAC AC adapter if RS232–RS485 is used.

3.8. Connecting to ASAMV

For the connection to the serial link, use terminals 1(–) and 2(+) in TB1 connector located in COMM BOARD communications board.

TB1:

Terminal	Function
1(–)	Differential input/output – (bidirectional). Negative polarity with respect to 2(+) for one MARK.
2(+)	Differential input/output + (bidirectional). Positive polarity with respect to 1(–) for one MARK.

You can use the special kit supplied to connect the computer to the inverter. This includes an RS232–RS485 or a USB–RS485 adapter box and the relevant cable (terminals (–) and (+). (See Connection Kits). Also, connect the box to the external 230 VAC AC adapter if RS232–RS485 is used.

X1: OFF = TERMINATION ON
ON = TERMINATION OFF

3.9. Connecting to Vega Drive and Sinus M Inverters

For the connection to the serial link, use terminals S+ and S– located on the device front part:

Term.	Function
S+	Differential input/output + (bidirectional). Positive polarity with respect to S – for one MARK.
S–	Differential input/output – (bidirectional). Negative polarity with respect to S+ for one MARK.

You can use the special kit supplied to connect the computer to the drive/inverters. The kit includes an RS232–RS485 or a USB–RS485 adapter box and the relevant cable (terminals (–) and (+). (See Connection Kits). Also, connect the box to the external 230 VAC AC adapter if RS232–RS485 is used.

3.10. Connecting to Orion Drive and Sinus N Inverters

For the connection to the serial link, use terminals N(–) and P(+) of the option board.

NOTE The option board must be used for the serial link.

Term.	Function
P	Differential input/output + (bidirectional). Positive polarity with respect to N for one MARK.
N	Differential input/output – (bidirectional). Negative polarity with respect to P for one MARK.

You can use the special kit supplied to connect the computer to the inverter. This includes an RS232–RS485 or a USB–RS485 adapter box and the relevant cable (terminals (–) and (+). (see Connection Kits). Also, connect the box to the external 230 VAC AC adapter if RS232–RS485 is used.

3.11. Connecting to DBU

The drive includes two connectors for the control of different electrical standards:

J2: RS232 9–pole, male connector

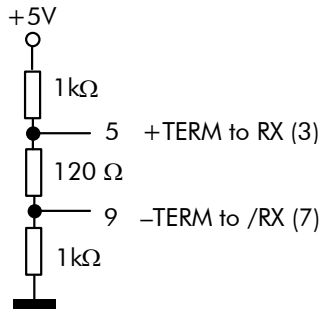
Pins	Function
1	+5V
2	RXD
3	TXD
4	not connected
5	GND
6	EX.R
7	not connected
8	not connected
9	not connected

J3: RS422 (full duplex) / RS485 (half duplex) 9–pole, female connector

Pins	Function
1	(GND) Ground of differential signals.
2	(TX+) Differential output +. Positive polarity with respect to pin 6 for one MARK.
3	(RX+) Differential input +. Positive polarity with respect to pin 7 for one MARK.
4	Not connected.
5	(+TERM) (+) point to "terminate" the line (see figure below).
6	(TX–) Differential output –. Negative polarity with respect to pin 2 for one MARK.
7	(RX–) Differential input –. Negative polarity with respect to pin 3 for one MARK.
8	Not connected.
9	(–TERM) (–) point to "terminate" the line (see figure below).

For the connection between the computer and the drive to RS485 port or RS422 (**J3**) port, you can use the kit supplied. This includes an RS232–RS485 or an USB–RS485 adapter box and the relevant cable (connector DBU) (see Connection Kits). Also connect the box to the external 230 VAC AC–adapter if RS232–RS485 is used.

This kit provides the following connections: 2–3–5 and 6–7–9. Transmission is 2-wire (half duplex) and termination line and bias impedances are activated (see figure below).
Open pins 5 and 9 if the line termination and bias must be disabled.



For the connection to RS232 (**J2**) port, use a null–modem cable (crossed–type).
Pin 6 (EX.R) must be connected to pin 1 (+5V) to enable **J2**.

3.12. Connecting to IPL

Two connections are available:

RS232, 9-pole female connector located on the inverter front part.

For the connection to the serial link, use RS232 connector located on the inverter front part.
This is a 9–pole, female (DTE) D connector having the following features:

Pins	Function
1 – 4 – 6 – 7 – 8 –9	not connected
2	(TX) Output according to the RS232 standard.
3	(RX) Input according to the RS232 standard.
5	(GND) Ground of TX and RX signals (insulated from the control board).

Three–wire RS232 is implemented. Handshaking hardware signal control is not implemented.
A connection wire of max. 3 m in length is allowed for RS232interface. No terminator is allowed.
Use a modem cable (not crossed) to connect your computer to RS232 port.

J25: RS485 (half duplex) Screwable terminal board

Term.	Function
1.	+5 V for RS232–RS485 adapter power supply (when used).
2.	(TX/RX+) Differential input/output + (bidirectional). Positive polarity with respect to terminal 3 for one MARK.
3.	(TX/RX–) Differential input/output – (bidirectional). Negative polarity with respect to terminal 2 for one MARK.
4.	(GND) Ground of the differential signals.

For the connection between your computer and the IPL you can use the special kit supplied. This includes an RS232–RS485 or USB–RS485 adapter box and the relevant cable (“SINUS” connector) (see Connection Kits).

3.13. Connecting to Plants Implementing ES851 Data Logger

ES851 Data Logger board allows both local and remote connections between your computer and a plant.

3.13.1. LOCAL CONNECTIONS

ES851 is provided with 2 COM ports for a local serial link.

COM 1

COM1 port is located on a male DB9 connector which is connected to ES851 via a flat cable supplied with the board itself.
COM1 is factory set to slave RS232 Modbus communication standard. This allows to connect your computer and the plant using COM1 port of ES851 and the COM port of the computer via the null-modem cable supplied with the Connection Kit for plants including ES851.
The following pin out allows to alter the factory setting and to change COM1 port to an RS485 serial port:

Pin	Function
1 – 3	(TX/RX +) Differential input/output + (bidirectional). Positive polarity with respect to pins 2 – 4 for one MARK.
2 – 4	(TX/RX –) Differential input/output – (bidirectional). Negative polarity with respect to pins 1 – 3 for one MARK.
5	(GND) Board ground, not isolated.
6	Not connected.
7 – 8	(GND) Board ground, not isolated.
9	+5V for RS232–RS485 adapter power supply (when used).

SW4 selector switch 1	ON = COM1 RS232 OFF= COM1 RS485
SW4 selector switches 3 and 4:	ON = TERMINATION ON OFF = TERMINATION OFF

NOTE

In addition to operating SW4 selector switch, move the flat cable supplied from CN3 (default) connector to CN11 connector to change COM1 from RS232 to RS485. Also, some software parameters must be changed (please refer to ES851 Data Logger's User Manual).

This pin out is compatible with the SINUS head of the special multipole cable supplied with the Connection Kits for Plants Implementing ES851. Just connect the male DB9 connector of the flat cable to the SINUS head of the multipole cable.

CAUTION

COM1 port can be changed to RS485 port only from ES851/1 version or greater. For ES851/0 boards, COM1 port supports RS232 standard only.

COM 2

COM2 port in ES851 allows the RS485 standard only, but is preset for the Profibus standard as well. Its pin out is the following:

Pin	Function
1 – 2	Not connected.
3	(TX/RX +) Differential input/output + (bidirectional).
4	RTS Profibus
5	(GND) Isolated signal ground
6	+5V
7	Not connected.
8	(TX/RX –) Differential input/output – (bidirectional).
9	Not connected.

SW2 selector switches 3 and 4: ON = TERMINATION ON
OFF = TERMINATION OFF

Because a dedicated pin out is used, you must use the special interface cable supplied with the Connection Kits for Plants Implementing ES851. Connect one end of the interface cable to the female DB9 connector located on ES851 and connect the other end of the interface cable to the SINUS head of the multipole cable supplied with the Connection Kit.

CAUTION COM2-RS485 port default setting is the master Modbus; to implement the slave mode, change the relevant software parameter (see ES851 Data Logger's User Manual).

ETHERNET

You can also connect the equipment in local mode via the Ethernet port of ES851 through the crossed-over Ethernet cable supplied with the Connection Kits for Plants Implementing ES851. The default IP address of ES851 is 192.168.0.2.

3.13.2. REMOTE CONNECTIONS

When using ES851, you can connect even only one computer to the plant.
Two connecting modes are available:

1. Via Modem (analog or GSM modem)
2. Via LAN and VPN-LAN.

MODEM CONNECTION

When using a modem connection, ES851 shall be connected via the RS232 port to a GSM or an analog modem through a straight RS232 cable. Program ES851 accordingly.
If provided with an analog or GSM modem, the remote computer can be connected to the plant in Rem(Master) /Client mode described in the Reversed REMOTE Connection (MASTER) section.

LAN or VPN-LAN

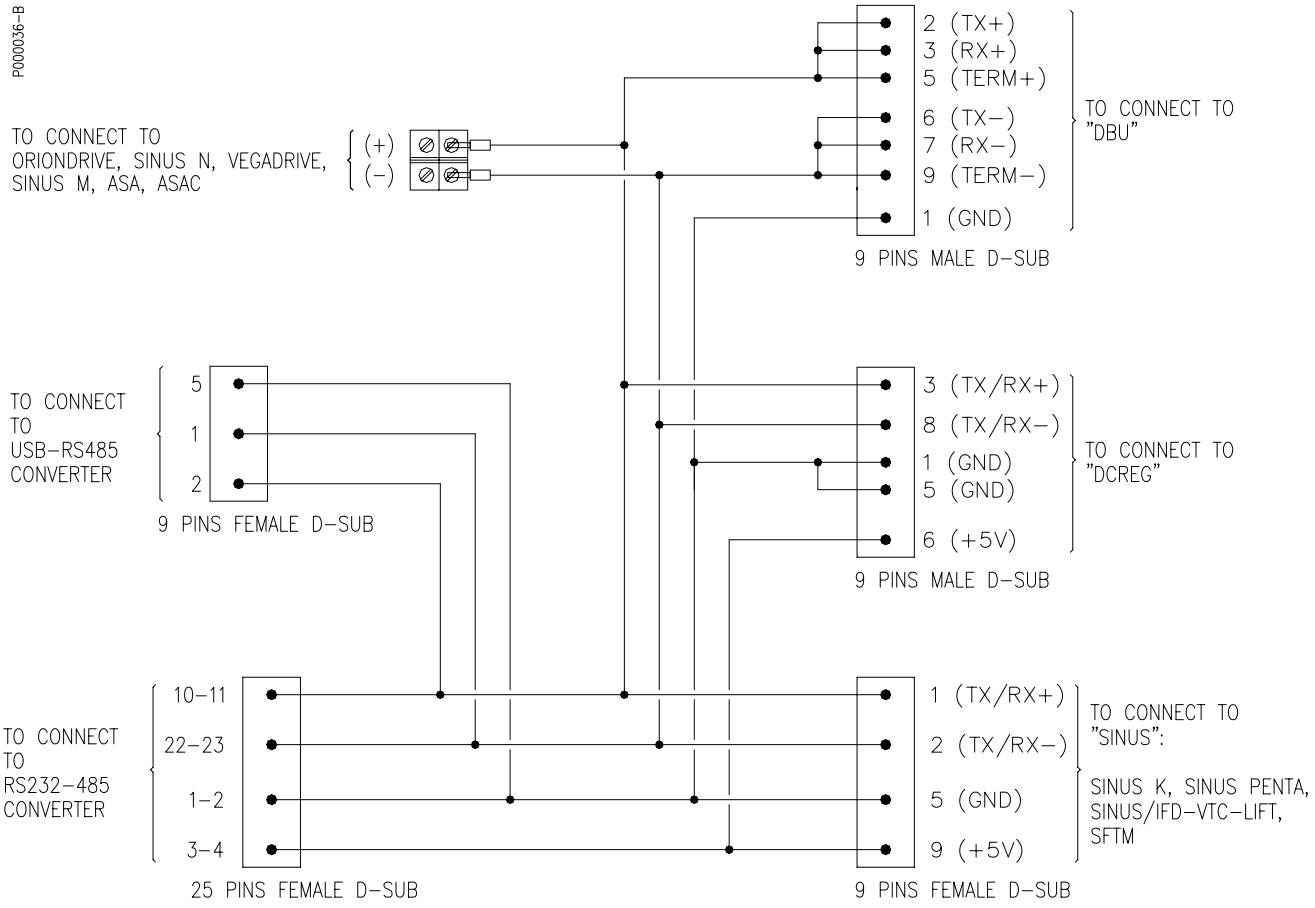
When using the Ethernet port in ES851 board and a straight Ethernet cable, the plant can be connected to a LAN which is allocated to a static IP address and to a gateway.
The remote computer can access the board in Rem(Master)/Client mode described in the Reversed REMOTE Connection (MASTER) section. The remote computer must be connected to the same LAN as ES851 or must be connected to the LAN via a VPN.

3.14. Connection Kits

Two connection kits are available depending on the computer port:

1. RS232–RS485 adapter box (including its 230VAC supply) and its standard cable (RS232);
2. USB–RS485 adapter and its standard USB cable.

Both kits are provided with a special cable with 2 computer–side connectors and 4 device–side connectors (see figure below).



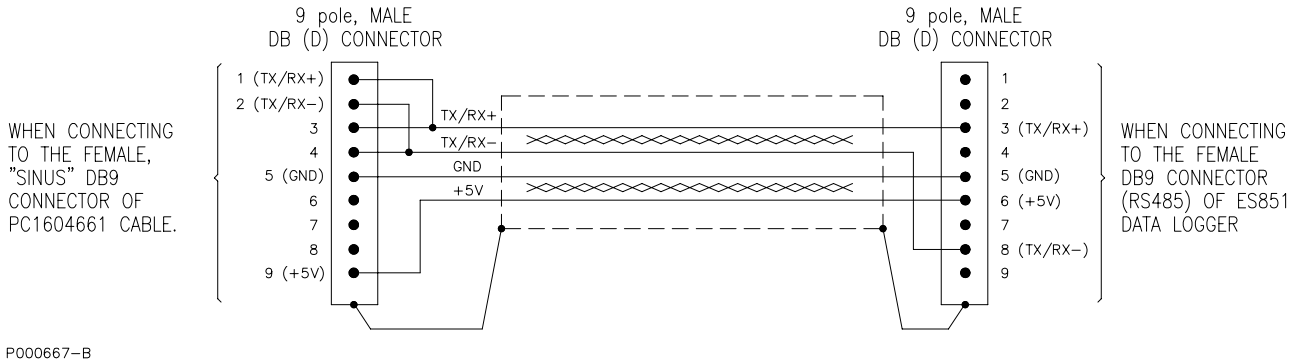
3.14.1. CONNECTION KITS FOR PLANTS IMPLEMENTING ES851

When using ES851, two Connections Kits are required based on the computer port being used. Some additional cables are needed if compared to the connection kits described in the previous section:

1. RS232–RS485 adapter box (including its external 230VAC adapter) and relevant RS232 standard cable;
2. USB–RS485 adapter box and relevant USB standard cable, USB-RS232 adapter box and relevant USB standard cable.

The following cables are supplied with the two kits above:

a) Special cable with 2 computer–side connectors and 4 device–side connectors (see figure above).
b) Standard crossed-over Ethernet cable, type EIA/TIA 568-A/B, class 5.
c) RS232 9-pole standard null-modem cable (cross-over cable).
d) Special cable for COM2-ES851 interfacing to be connected to the SINUS connector of cable a) for slave Modbus connections via RS485 to ES851 (see figure below).



3.15. General Notes

NOTE In case of RS485 multidrop connection to multiple devices, if an RS232–RS485 adapter box is used, always supply it with the external 230 VAC AC–adapter. DO NOT CONNECT the +5V and GND pins of the connected drives.

NOTE In case of RS485 multidrop connection to multiple devices, the device with the longest connection to the computer must have the line termination and bias termination on.
The intermediate–located devices must have the line termination and bias termination off.

NOTE For the following devices: Sinus M, Vega Drive, Sinus N, Orion Drive, ASAMV Soft Starter, the bias cannot be enabled/disabled. Only the line terminator can be enabled/disabled.

NOTE The line termination and bias for ASA, ASAC0/1 and SFTM soft starters cannot be disabled.

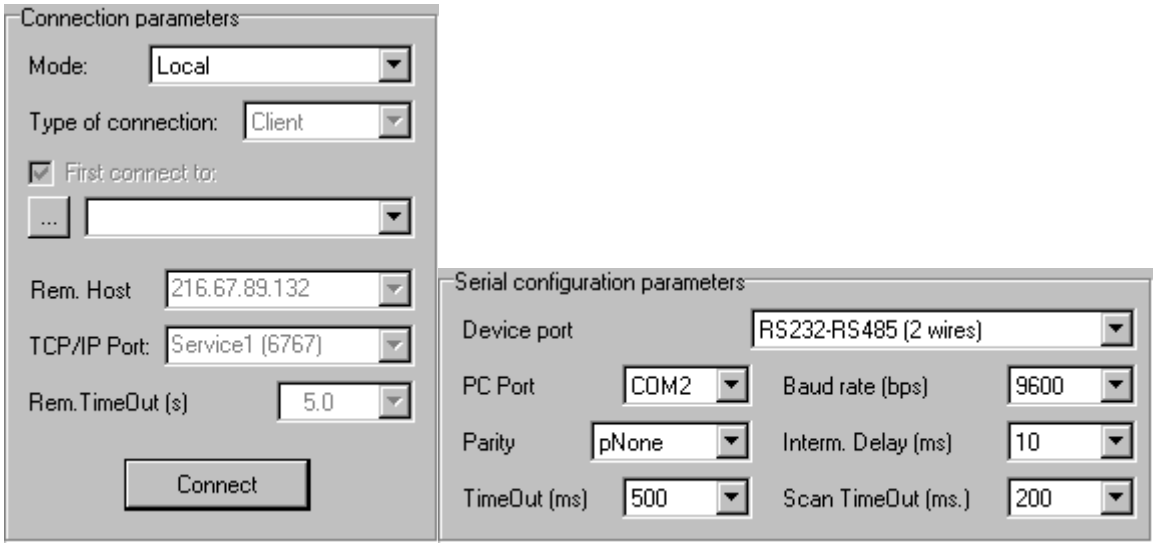
NOTE For DBU, the line terminator and bias can be disabled by opening pins 5 (TERM+) and 9 (TERM–) of its cable.

4. INSTALLING THE SOFTWARE – CONNECTING PROCEDURES

4.1. Local Connection

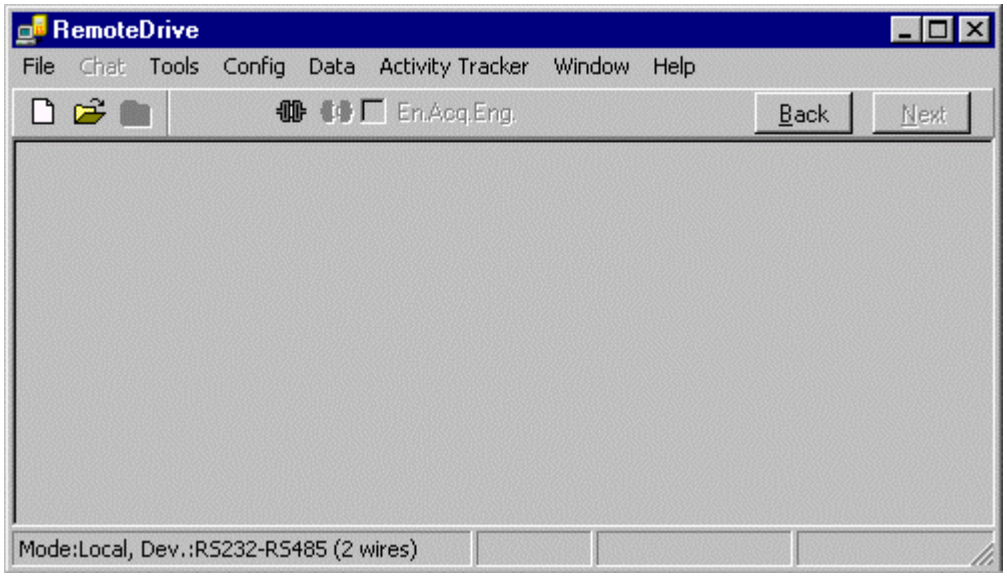
Check the serial connection between the computer and the device. If you are using the RS485 or RS422 protocol, check to see if the configuration is correct and if the adapter box is powered.

Start the Remote Drive, choose the language and click Next
Set the connection type as follows:



Set the protocol considering the selected connection and serial port. Baud and Parity must match with the values set through the device keypad.

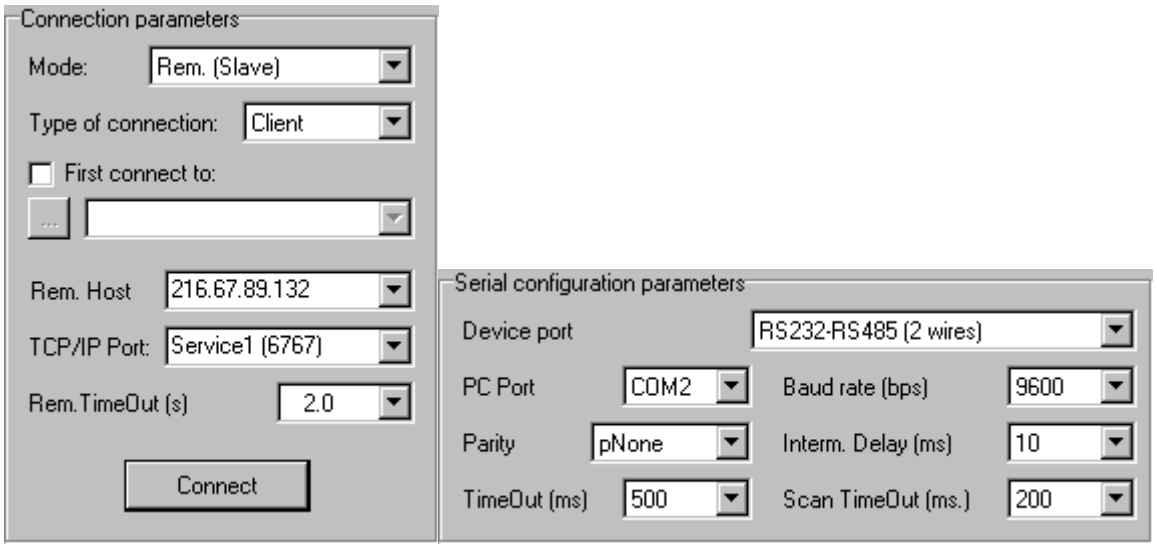
1. Establish the connection (click Connect) and check if the connection is on on the status bar of the application (in the bottom right corner): Connected to: [COM2]
2. Click Next
3. You entered the main application area. Follow the instructions given in par.Main Window.Set the protocol considering the selected connection



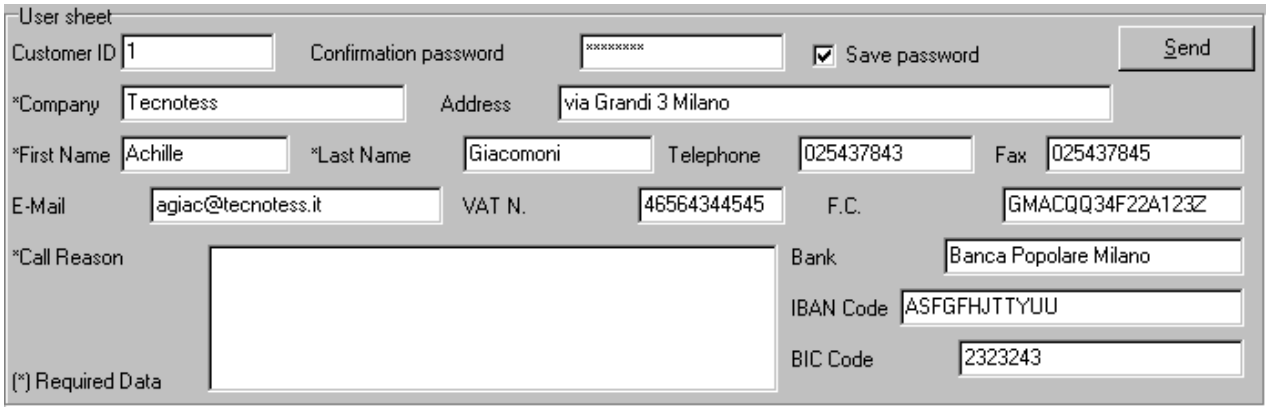
4.2. REMOTE Connection (Slave)

The goal here is to contact remote service through the Internet at the address specified in the "Rem. Host" field", where a PC is available with an active Remote Drive as a master ready to control the device.

1. Check the serial connection between the computer and the device. If you are using the RS485 or RS422 protocol, check to see if the configuration is correct and if the adapter box is powered.
2. Start the Remote Drive, choose the language and click Next
3. Set the connection type as follows:



In the Rem. host field, enter the IP address of the computer you are connecting to instead of 216.67.89.132! Set the device port based on the connection you chose and the correct serial port of the computer. The baud rate and parity must be the same values as the ones set via keypad.



Fill in the user sheet (section User Sheet)

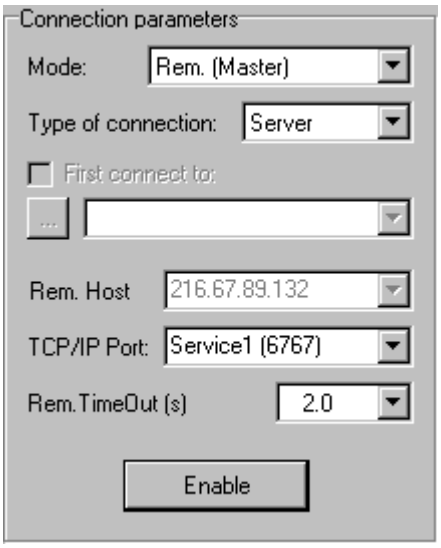
4. Without closing the Remote Drive, establish the connection to the Internet. This connection is the same as the one you use to navigate or send and receive e-mail messages.
5. Click "Connect". Check if the connection is on on the status bar of the application (in the bottom right corner): Connected to: 216.67.89.132
   This can be seen when the Chat window automatically opens.
6. Click Next
7. You entered the main application area. Follow the instructions given in section Main Window Remember that in slave mode you cannot write or save any parameter to Eeprom.

4.3. REMOTE Connection (MASTER)

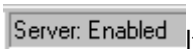
Generally, the master computer receives the slave calls, so it must be activated before the slave starts calling.

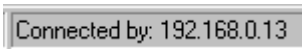
1. Start the Remote Drive, choose the language and click

2. Fill in the connection sheet as follows:



Fill in the operator sheet: (section Operator Sheet).

3. Without closing the Remote Drive, establish the connection to the Internet.
4. Click "Enable". The Remote Drive is now enabled to receive a connection, as you can see by the string display on the status bar: 

If the connection is on, the status bar will display the following string: 

5. Once the connection is established, click

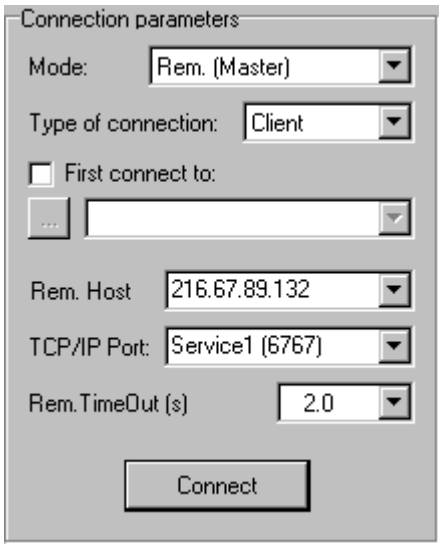
6. You entered the main application area. Follow the instructions given in section Main Window.
   The connection to the Internet will slow down the data transfer procedure; this is due to the connection quality.

4.4. Reversed REMOTE Connection

This type of connection is required for remote monitoring when no operator is needed. With this connection mode, the master device places the calls, which will be received by the slave device.

4.4.1. REVERSED REMOTE CONNECTION (MASTER)

1. Start the Remote Drive, choose the language and click Next.
2. Fill in the connection sheet as follows:



Fill in the operator sheet (section Operator Sheet):

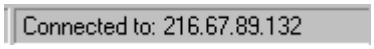
3. Do the following based on the type of connection:

   a) **Remote computer-Local computer via the Internet:** Without closing the Remote Drive, establish the connection to the Internet, tick 'First connect to' (see section First Connect to) and select the desired connection to the Internet.
   In **Rem. host**, enter the IP address of the computer you are connecting to instead of 216.67.89.132 (e.g. 'elettronicasanterno.it').

   b) **Remote computer-Local computer/ES851 via modem:** Without closing the Remote Drive, establish the point-to-point connection, or tick 'First connect to' (see section First Connect to) and select the desired modem connection.

   c) In **Rem. host**, when ticking 'First connect to' (see section First Connect to), the 10.0.0.1 address is automatically displayed. This is the default address for modem connections of plants provided with ES851 Data Logger.
   In **Rem. TimeOut**, increase the delay figure (10 seconds if you are connecting to a GSM modem, 5 seconds if you are connecting to an analog modem).

   d) **Remote computer-ES851 via LAN or LAN –VPN:** in **Rem. host**, enter the IP address of ES851you are connecting to.

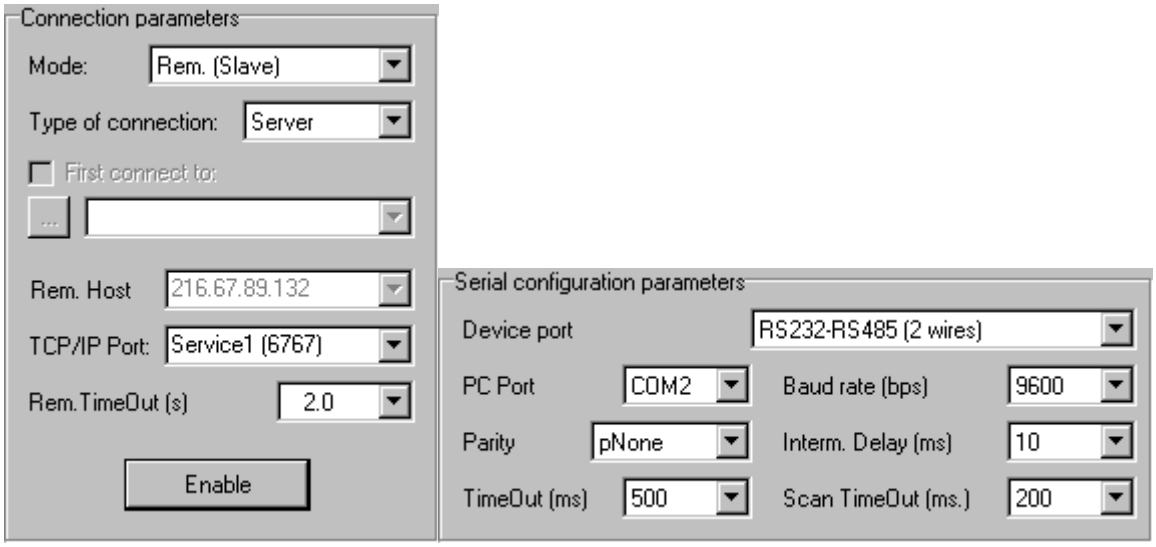
4. Click "Connect" and check if the connection is established (see bottom right corner of the status bar of the application): 

the Chat window automatically opens.
5. If enabled on slave-side, you are asked to enter an access password (Options Window) required to complete the access procedure.
6. Click

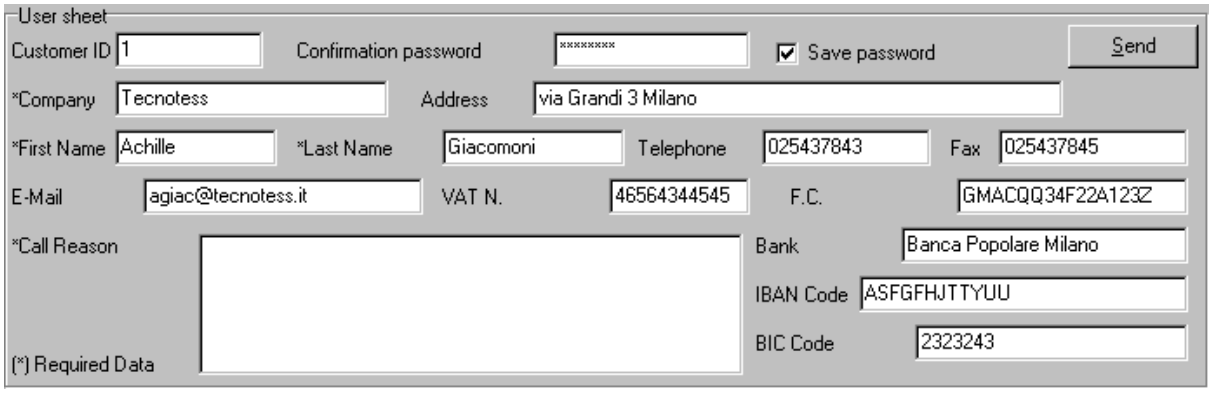
.
7. You gained the main work area of the application; follow the instructions given in section Main Window.

4.4.2. REVERSED REMOTE CONNECTION (SLAVE)

1. Check serial link between your computer and the equipment. If RS485 or RS422 protocols are used, make sure that their configuration is correct and check if the adaptor box is powered on.
2. Start the Remote Drive, choose the language and click Next.
3. Set the type of connection as follows:



Set the device port based on the connection you chose and the correct serial port of the computer. The baud rate and parity must be the same values as the ones set via keypad.



Fill in the user sheet (see section User Sheet).

4. Connect to the Internet without closing the Remote Drive.
5. Click "Enable". The Remote Drive is now enabled to receive connections, as stated in the status bar: Server: Enabled. If the connection is established, the status bar shows Connected by: 192.168.0.13.

The local operator can use the Remote Drive with the same functionality as the local connection (such as open projects, read parameters, perform acquisitions…) . Only, access to write is enabled by entering a password from the Config. Menu. See section Options Window.

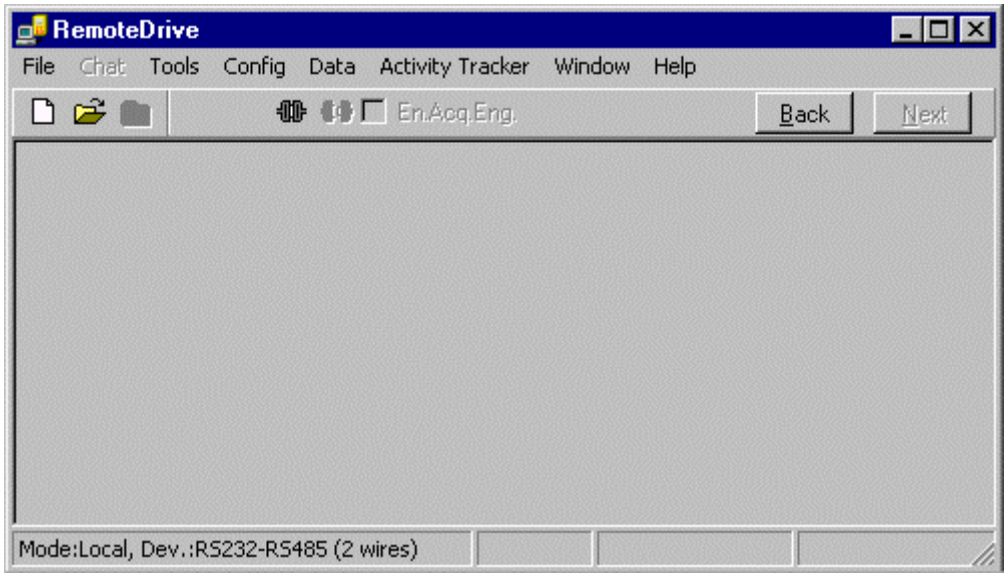
5. USER INTERFACE

5.1. Main Window

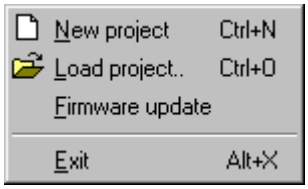
This is an MDI-type window (MDI means Multiple Document Interface) containing all the application windows. The command menu changes depending on the active window.

The

buttons allow to switch from the standard working area to the connection window and to the language selection window.



Click File; the dropdown menu below appears:



5.1.1. NEW PROJECT

Opens the project window. See section Project Window

5.1.2. LOAD PROJECT

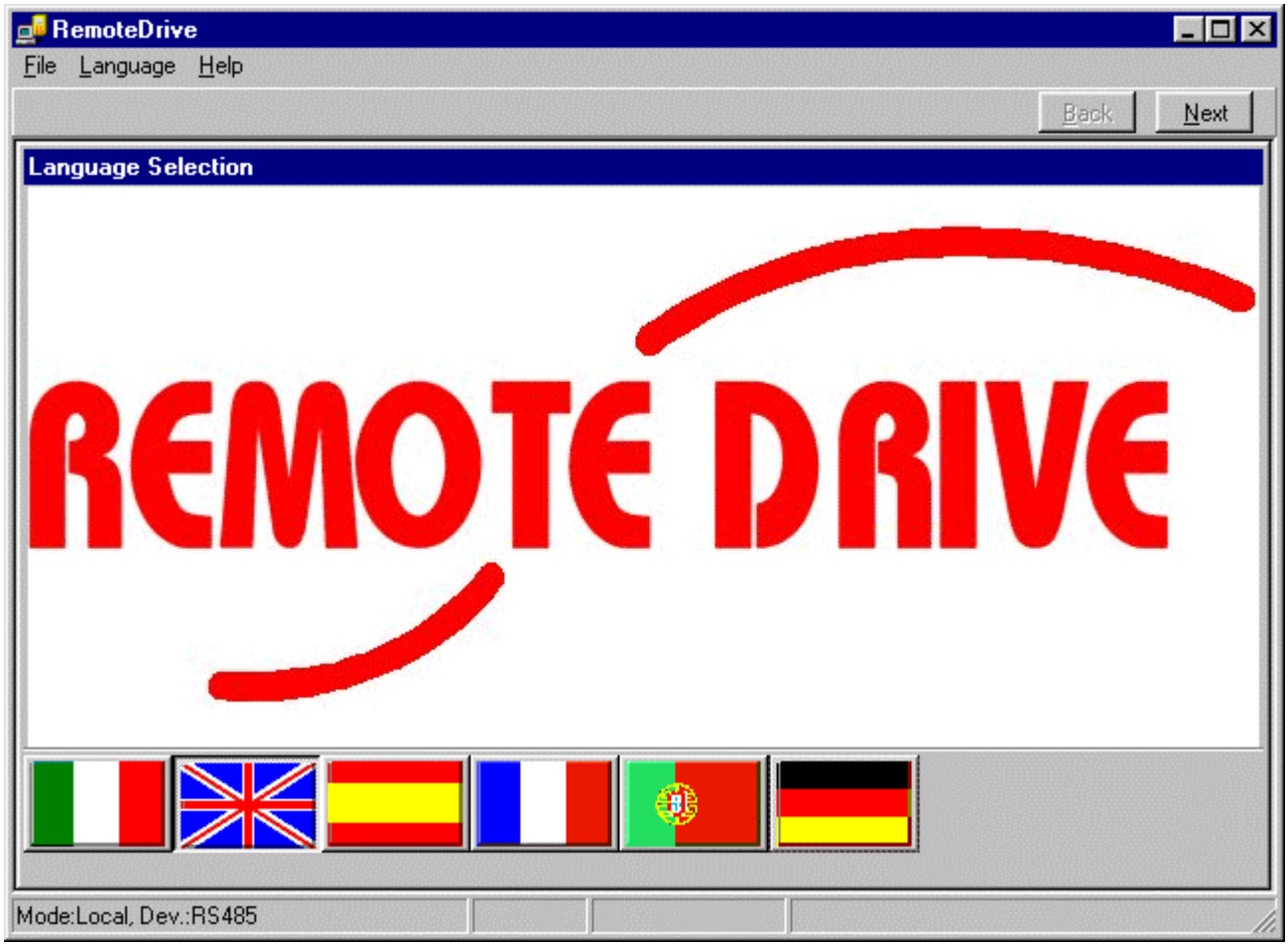
Loads a project from file. See section Load Project.

5.1.3. FIRMWARE UPGRADING

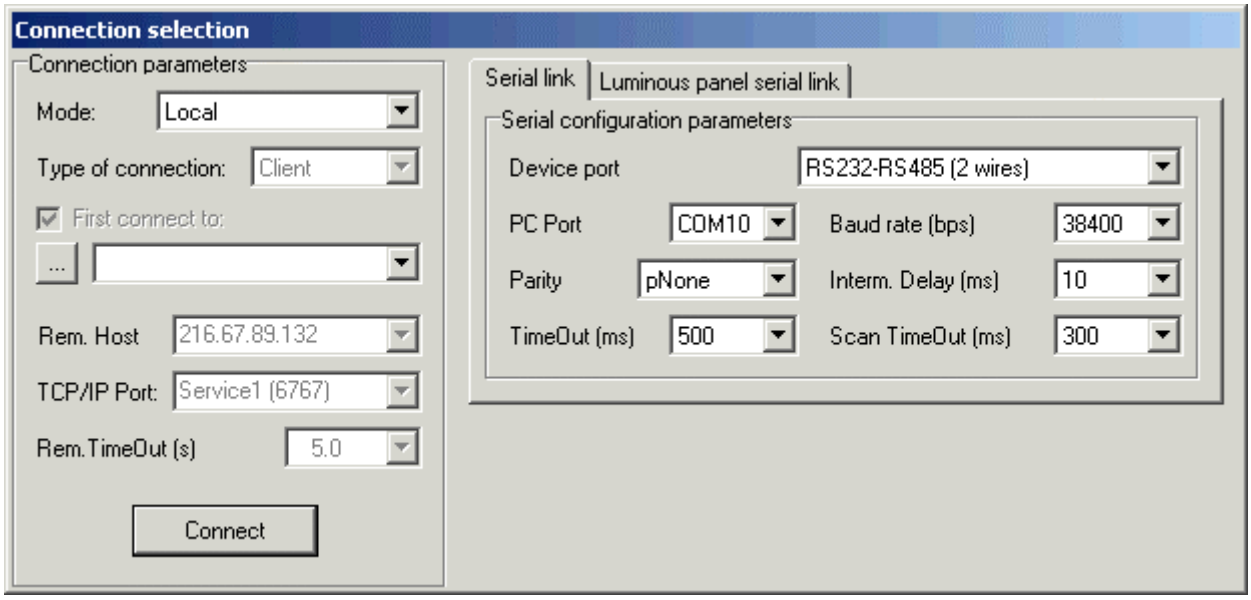
Opens the window of the firmware download utility of the equipment. See section Device Firmware Upgrade Window.

5.2. Language Selection

The language selection window is displayed whenever Remote Drive is started. You can select a new language by clicking the relevant flag or clicking the Language menu.
Remote Drive supports 7 languages.

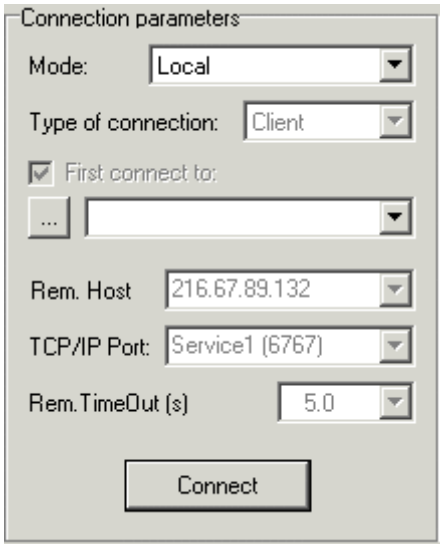


5.3. Selecting the Connection Type



This window allows to select the connection type and the master or slave configuration of the computer with respect to the device or to another computer (in case of remote connection). The display of the required parameters will change depending on the selected mode (only the parameters used are active).

5.3.1. CONNECTION PARAMETERS



5.3.1.1. MODE

1. **Local**
   Local mode: the computer is directly connected to the device by means of an RS232 serial cable or an RS232/RS485 adapter.
2. **Remote (Master)**
   The computer controls the device through another computer configured as a slave.
3. **Remote (Slave)**
   The computer receives any query from the master computer and sends them to the device. Any device response will be sent to the master computer. In slave mode, you can read any measure and parameters, but you cannot write any parameter, since writing depends on the master computer only.

5.3.1.2. CONNECTION TYPE

In remote connection mode, it determines if the calls are to be sent or received by the computer:

1. Client
   The call must be sent by the computer. Before calling, make sure that the computer configured as a server is enabled to receive the call.

2. Server
   The computer is configured to receive the calls sent by the client computer.

5.3.1.3. REMOTE HOST ADDRESS

Active in client mode only. This is the server computer name you are connecting to.
This box also acknowledges the IP address of the server computer.

5.3.1.4. TCP/IP PORT

TCP/IP port for the connection. The port number ranges from 1 to 65535 and can be configured by selecting a number that is not used by any other TCP/IP services.

5.3.1.5. REMOTE TIMEOUT

Maximum delay (in ms) of the response sent by the server after a client's query. Once this timeout is over, a timeout message will be displayed.

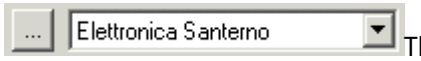
5.3.1.6. BUTTON

In local mode, it enables or stops the serial connection. In remote mode, if the connection type is Client, it enables or stops the connection to the server computer. If the connection type is Server, it enables or disables the computer to receive a call from the client computer.

5.3.1.7. FIRST CONNECT TO

This is available only if 'Type of connection Client' is selected.

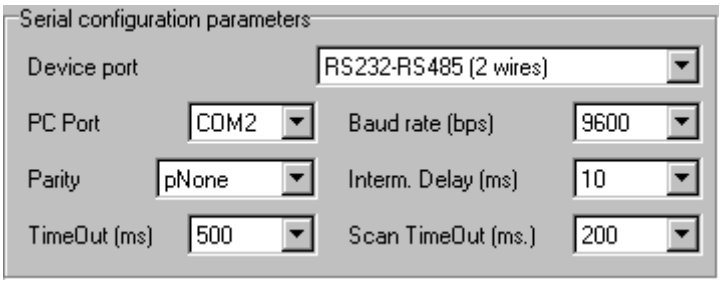
If the 'First connect to' box is selected, a remote connection is automatically established before connecting the equipment. This connection is required if the equipment to be queried is connected to a modem, or whenever a remote connection is needed.



This combobox allows to choose one remote connection among the available connections set in the Windows Network Connections window. Alternatively, click

to create a new connection or to alter any existing connection. See section Remote Access Configuration.

5.3.2. SERIAL PORT PARAMETERS



Parameters required to configure the computer serial port connected to the device in local and slave mode.

5.3.2.1. DEVICE PORT

1. **RS232**
   Three-wire standard RS232C is used.
2. **USB-RS232**
   Protocol RS232C using a USB port of the computer set as a virtual COM. A converter USB/RS232 is needed (not included in the connection kit).
3. **RS232-RS422 (4-wire)**
   Four-wire RS422 protocol, supportable through a RS232/485 adaptor box included in the connection kit. No bidirectional control is needed.

NOTE A connection cable different from the one supplied must be used.

4. **USB-RS422 (4-wire))**
   Four-wire RS422 protocol using a USB port of the computer set as a virtual COM. Adaptor box USB/RS485 included in the connection kit is needed.

NOTE A connection cable different from the one supplied must be used. A different configuration of the jumpers inside the connection box is needed.

5. **RS232-RS485 (2-wire)**
   Two-wire RS485 protocol supportable through a RS232/485 adaptor box included in the connection kit. The bidirectional control of the line is obtained through RTS signal.
6. **USB-RS485 (2-wire)**
   Two-wire RS485 protocol using a USB port of the computer set as a virtual COM. Adaptor box USB/RS485 included in the connection kit is needed.
7. **RS232-Keypad** (DCREG only)
   Special protocol for the firmware updating through the keypad connector. Uses standard RS485; adaptor box RS232/485 is needed.

NOTE A connection cable different from the one supplied must be used.

8. **USB-Keypad (DCREG only)**
   As step 7 above (RS232-Keypad), but the USB port of the computer is used. Adaptor box USB/RS485 is needed.

NOTE A connection cable different from the one supplied must be used.

5.3.2.2. COMPUTER PORT

Serial port of the computer connected to the device.

5.3.2.3. BAUD RATE

Baud rate of the serial port. It must be the same as the one selected in the device.

5.3.2.4. PARITY

Specifies the parity bit. It must be the same as the one selected in the device.

5.3.2.5. INTERM. DELAY

Minimum delay between a response and a new query. This is a waiting time, expressed in ms, between the last response received by the device and a new query sent by the PC. This is useful when you use the RS485 protocol and the device connected during the response maintains the transmission for a time longer than the time required for the data transfer.

5.3.2.6. TIMEOUT

Max. allowable time between a computer query and a device response. When this timeout is over, an alarm message is displayed.

5.3.2.7. SCAN TIMEOUT

Max. allowable time between the PC query and the device response during the scanning of the devices connected to the network.

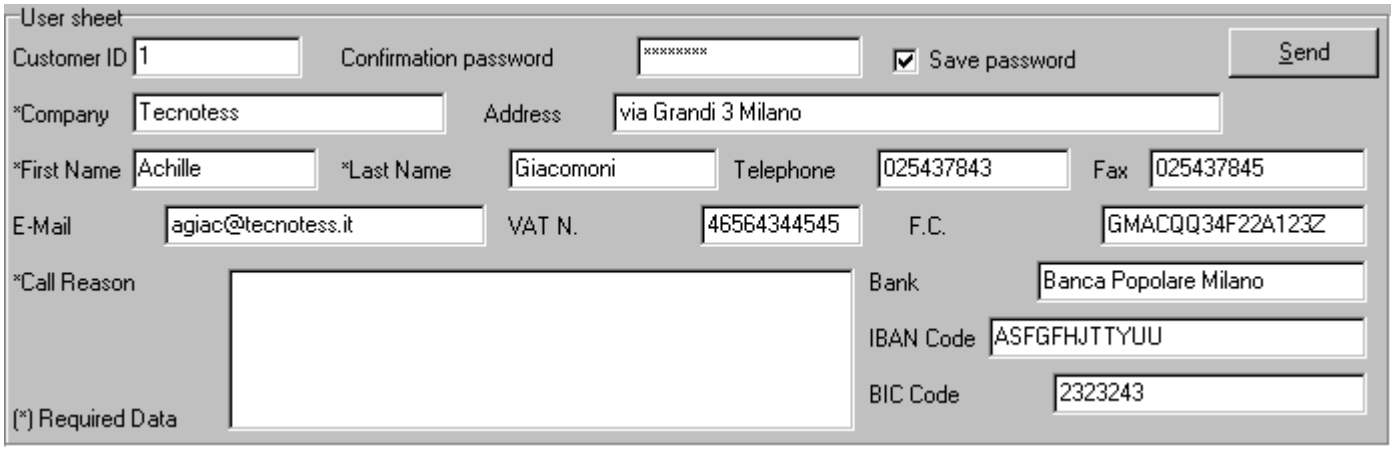
5.3.3. IP LOCAL ADDRESS

It appears in remote mode and states the IP address of the computer in the current connection session.

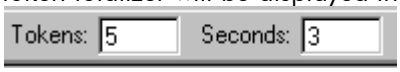
5.3.4. OPERATOR SHEET

It appears in master mode and must be filled in because it states, for the slave computer operator, the name of the service technician you called. As soon as the connection is established, it will appear in the Chat window of the slave computer.
Available: it always indicates to the computer if the operator can receive a call or if he is unavailable at the moment.

5.3.5. USER SHEET

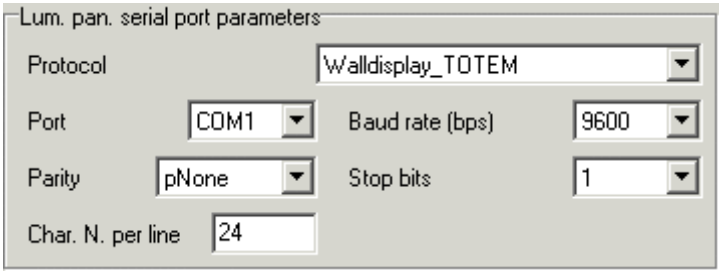


It appears in slave mode and must be filled in because it identifies the company, the operator and the reason of the call.
If you prefer using a token assistance contract, you must state the user code and password. In that case, once the connection has been established, the token totalizer will be displayed in the top right corner of the window (the counting will start after 10 seconds).



The "Send" button allows to automatically record the user personal data and fiscal data in the service database - after sending a query to the personnel in charge.

5.3.6. LUM. PAN. SERIAL PORT PARAMETERS



These are the parameters required when configuring the computer serial port connected to the luminous panel (wall display).

5.3.6.1. PROTOCOL

Selects the driver allowing to control the display. The driver consists in .dll files. The filenames correspond to the model of wall display contained in the "LedPanelsDLL" folder.

5.3.6.2. PORT

Serial port of the computer connected to the equipment.

5.3.6.3. BAUD RATE

Baud rate of the serial port. It must be the same as the baud rate selected for the equipment.

5.3.6.4. PARITY

Sets the parity bit. It must be the same as the parity selected for the equipment.

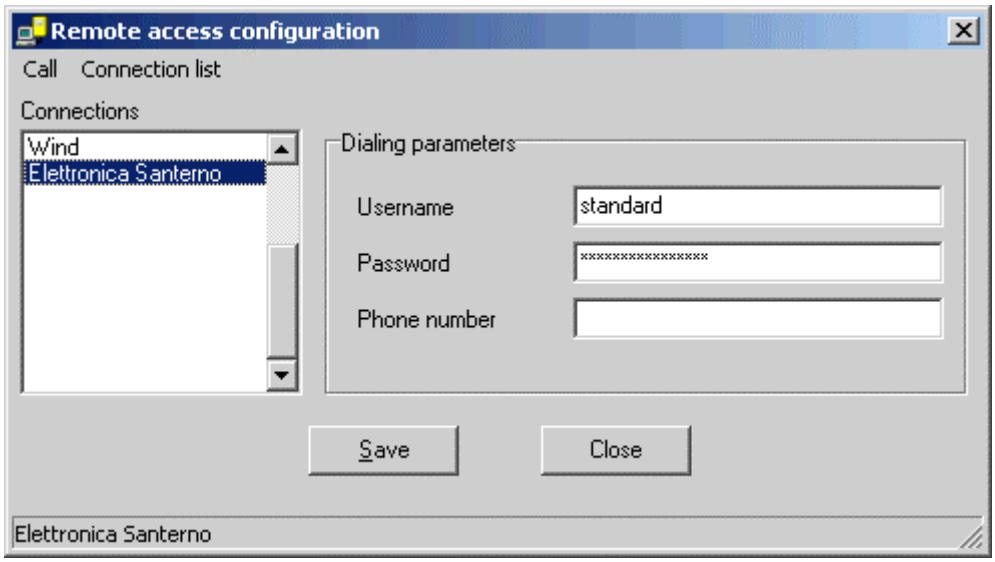
5.3.6.5. STOP BITS

Sets the number of stop bits.

5.3.6.6. CHAR. N. PER LINE

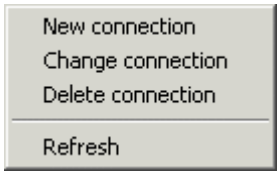
Maximum allowable number of characters per line that can be displayed.

5.3.7. REMOTE ACCESS CONFIGURATION

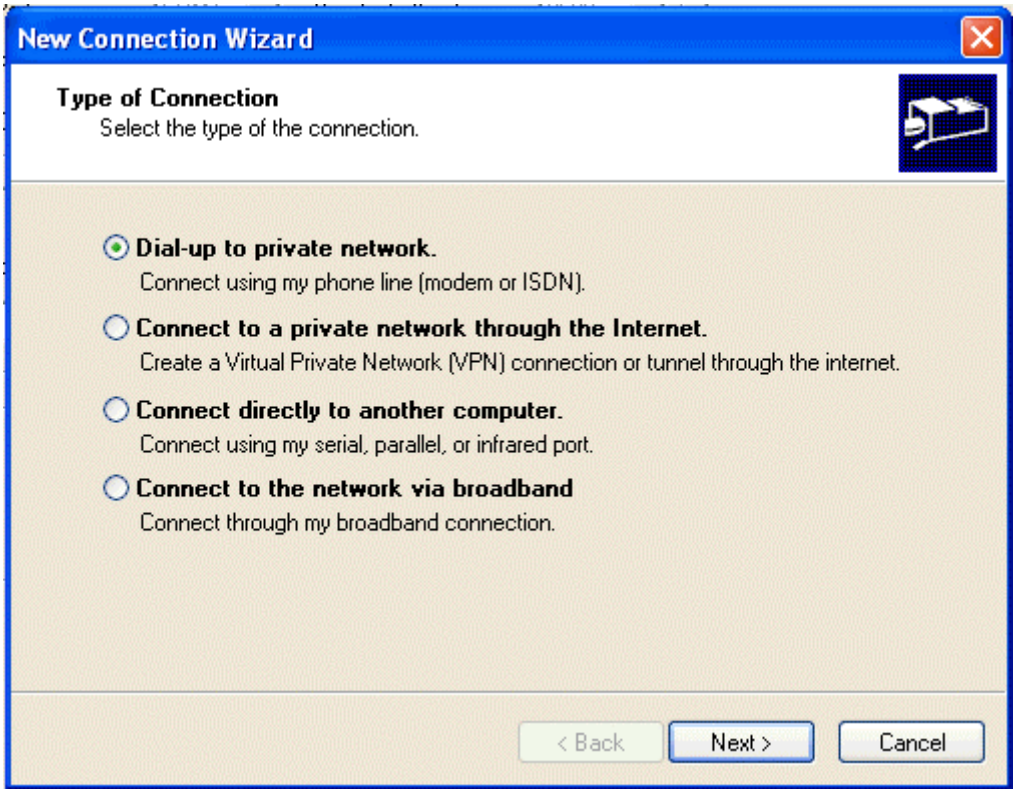


The remote access window is a simplified interface for the Windows network connections window. For each connection, you can set and alter the following data: Username, Password, Phone number.
Use the **Call->Dial** command to test the selected connection.

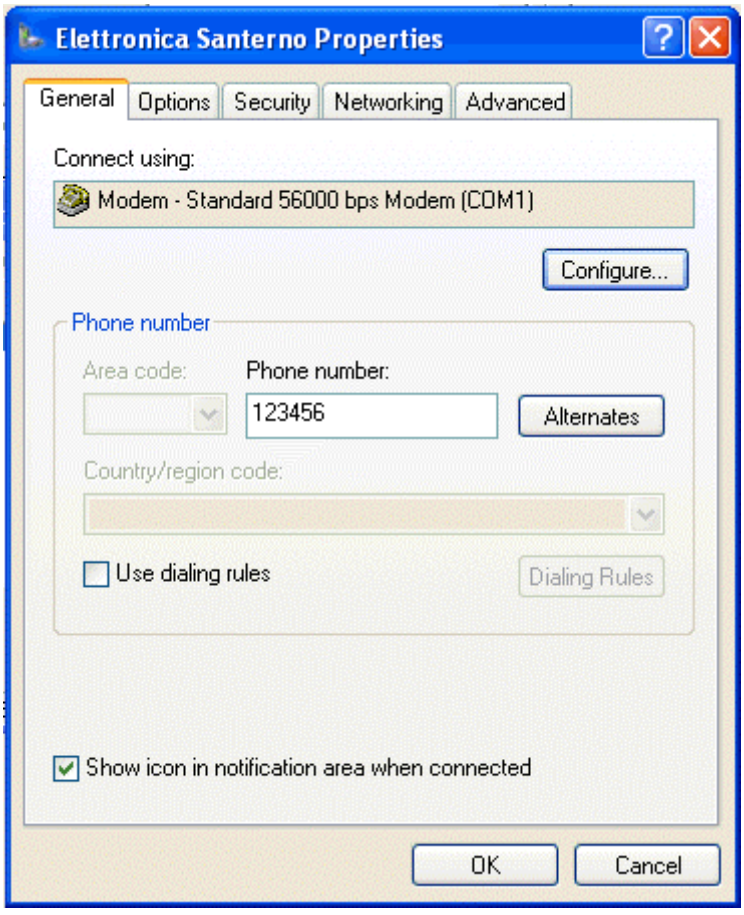
5.3.7.1. CONNECTION LIST MENU



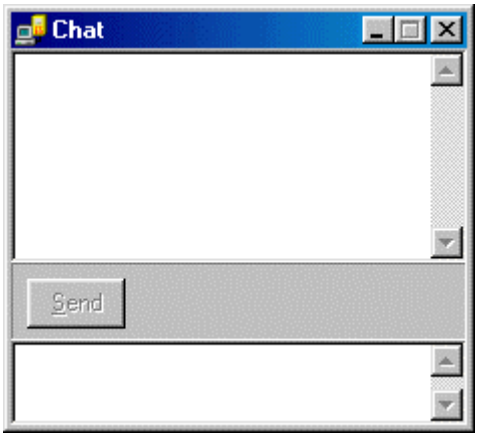
From the **Connection list menu**, use the **Connection list->New connection** to create additional connections, as this function automatically recalls the utilities of the operating system to create a new connection.


New Connection Wizard
Type of Connection
Select the type of the connection.
Dial-up to private network.
Connect using my phone line (modem or ISDN).
Connect to a private network through the Internet.
Create a Virtual Private Network (VPN) connection or tunnel through the internet.
Connect directly to another computer.
Connect using my serial, parallel, or infrared port.
Connect to the network via broadband
Connect through my broadband connection.
< Back
Next >
Cancel

You can also alter advanced connection parameters using the **Connection list -> Change connection** command.



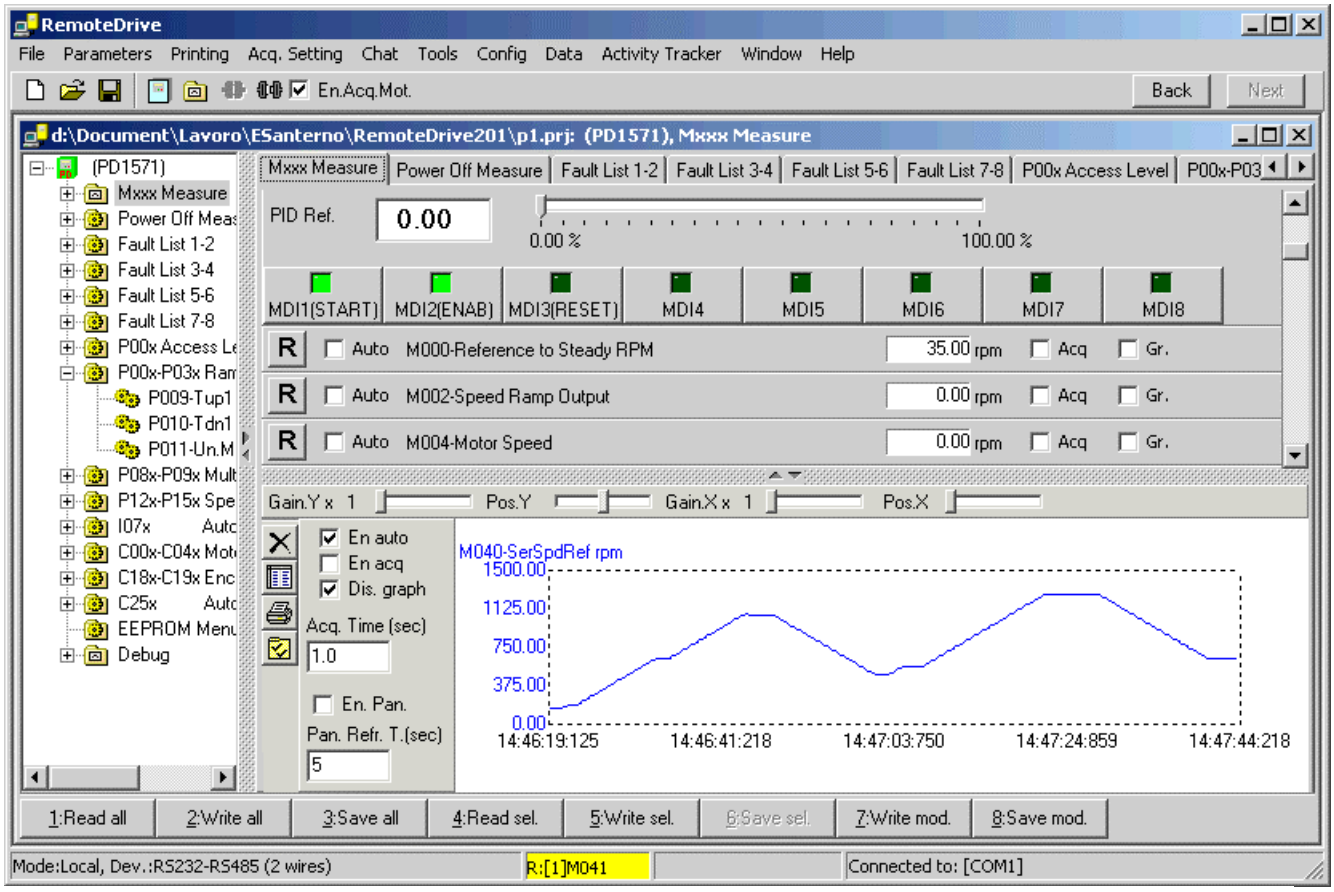
5.4. CHAT Window



The Chat window appears when you select a remote connection mode. It is active only once the connection has been established and is used to dialog with the operator of the remote computer.
The top box lists history messages from the top to the bottom. Each message is preceded by Date Time and Sender. The Remote Drive is the <System> sender.
Use the bottom box to write the message. The message may be composed of multiple lines. The cut and paste function is supported.

5.5. Project Window

This window displays the parameters for one or multiple devices.
This window may be customized. You can select the number of devices to display and the number of parameters for each device. The structure is called a project and may be saved to floppy disk and be reloaded when required.



The project window is divided into two sections: a tree structure summarizing the devices and the relevant parameters, and a sheet structure grouping the different parameters by characteristic.

Command Bar

All-purpose enabling of the acquisition engine.

Command:New Device.

Goes to the next measure sheet of the project.

Connection shortcut command.

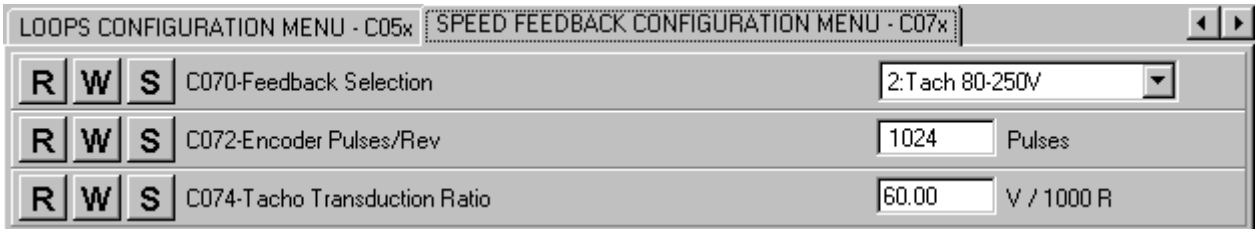
Disconnection shortcut command

5.5.1. ELEMENTS OF THE TREE LIST:

Level	Object	Reference in the file menu	Description
1	[1]-Motor:1 (DC306)	device	MODBUS address, name, device type + firmware version
2	KEY MENU - P00x MEASURE MENU - Mxxx	parameter sheet	The parameter sheet may be of two types: parameters measures.
3	P000-Key	parameter	Parameter name, truncated description of the parameter.

You may save and load the entire tree list or some part of it. There is no limitation for the device number, the parameter sheets and the parameters to be entered in the tree list, but a lot of them will make the application run slowly.

5.5.2. PARAMETER SHEET


LOOPS CONFIGURATION MENU - C05x
SPEED FEEDBACK CONFIGURATION MENU - C07x
R W S C070-Feedback Selection 2:Tach 80-250V
R W S C072-Encoder Pulses/Rev 1024 Pulses
R W S C074-Tacho Transduction Ratio 60.00 V / 1000 R

Contains the device configuration parameters. Normally, you can read, edit, write and save to Eeprom.

R Read

W Write

S Save to EEprom

The parameter value highlighted in red

means that its value cannot be read. The represented value is the default value.

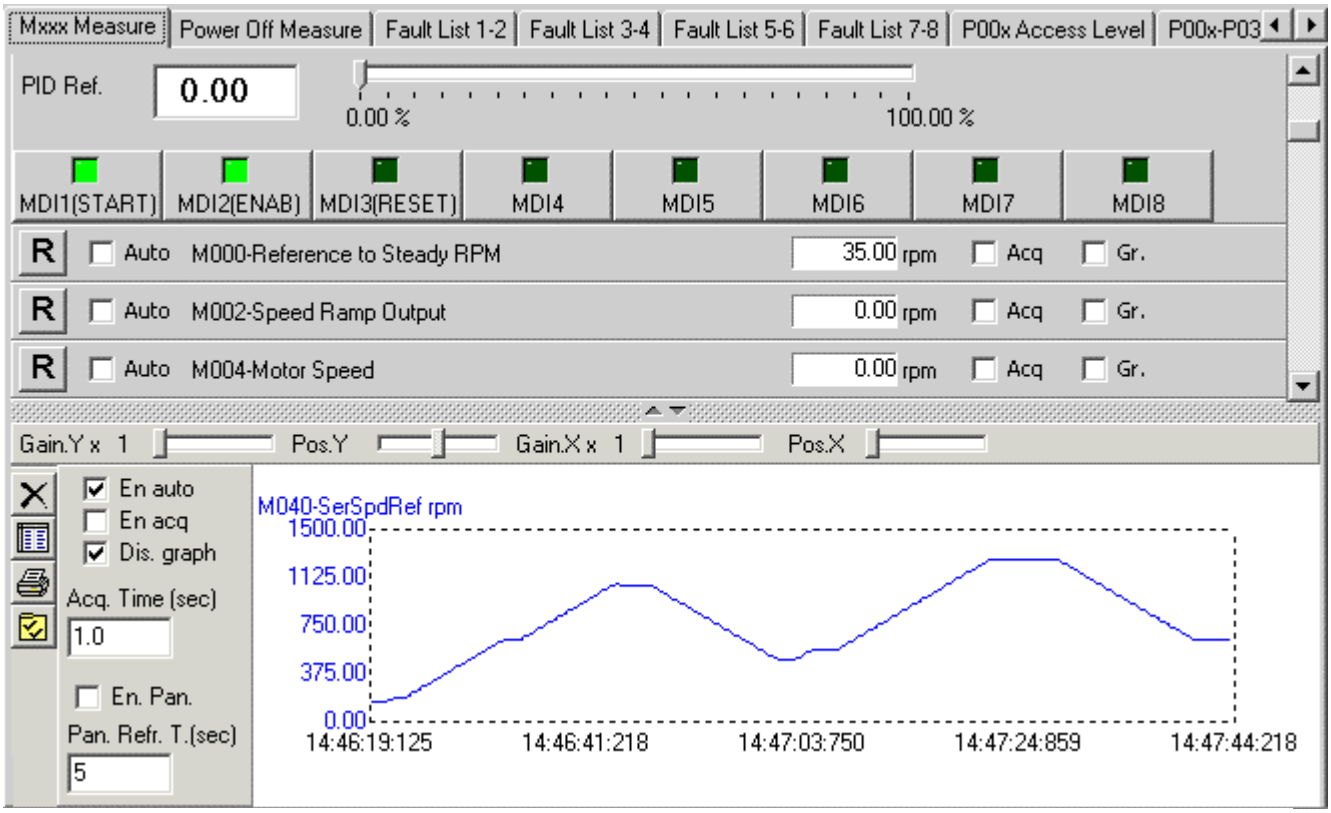
The parameter value highlighted in yellow

means that the parameter has been changed but has not been written.

The parameter value highlighted in aqua

means that the parameter has been changed and written but has not been saved to EEprom.

5.5.3. MEASURE SHEET



This sheet allows to display, acquire, and graphically represent the time trend of all the device measure parameters.
The acquisition results may be printed or saved to disk in RTF or CSV format.
You can record the device history data and associate the acquisition of a certain number of measures with its editing.
A console for the device remote control is also available.

5.5.3.1. MEASURE PANEL

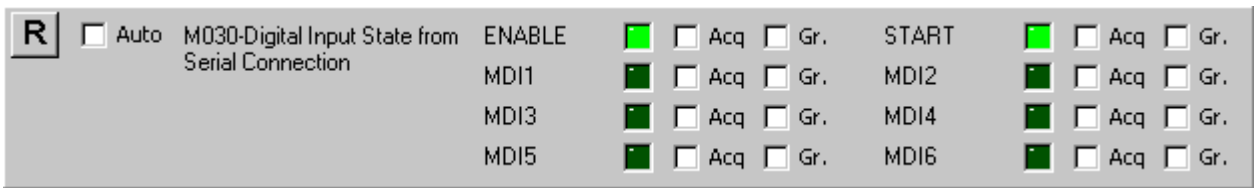
R Reads the current measure.

Auto Performs the measures in automatic mode at time intervals specified by **Acq. Time.**

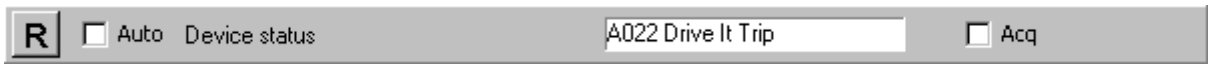
Acq. Records the measure. Recording may be done in two ways: either at time intervals specified by **Acq. Time,** only if **En Acq** is active, or at each device state change, only if Acq. is active in the panel displaying the device state.

Dis. graph Graphically represents the time trend only if **Dis. graph** is active.

5.5.3.2. STATE DISPLAY PANEL



5.5.3.3. PANEL FOR DEVICE STATE DISPLAY

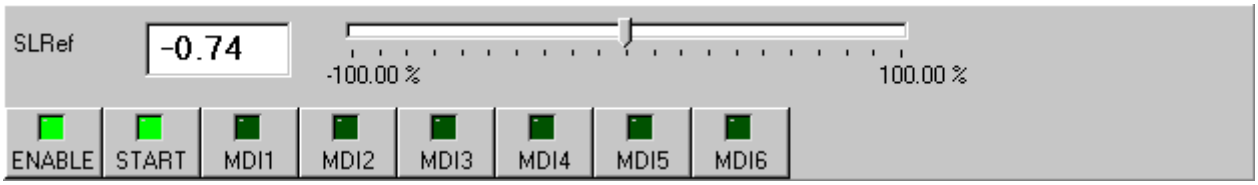


R Refreshes the state.

Auto Performs the cyclic reading of the state. The time interval is specified by State Acq. Time.

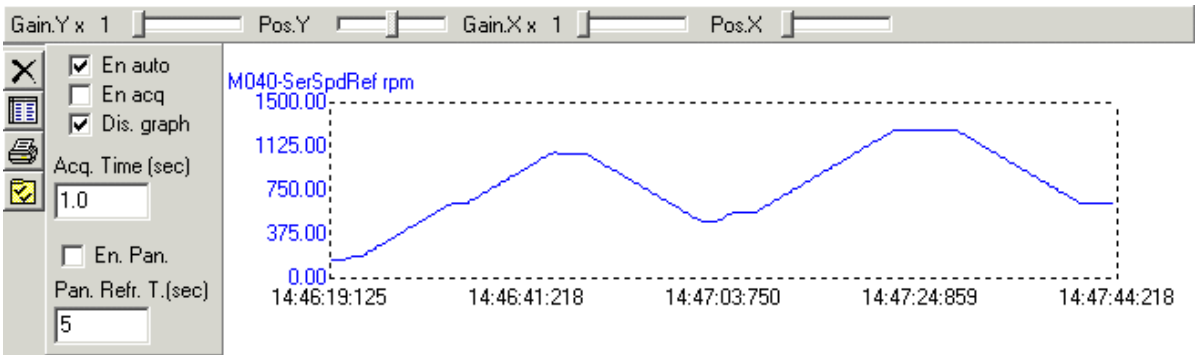
Acq. Enables the state recording. The actual acquisition will take place only once the state is changed. The state is checked at each time interval specified by State Acq Time. As stated in section Measure Panel, you can acquire any measure when the state changes by enabling the relevant Acq..

5.5.3.4. REMOTE CONSOLE PANEL



This console allow to control the device by enabling specific parameters. Eight control buttons are available in conjunction with a cursor or a text box to edit the reference.

5.5.3.5. GRAPH PANEL AND ACQUISITION TABLE



Gain. Y

Vertically zooms to the graph of the selected quantity.

Pos. Y
Adjusts the vertical position of the graph of the selected quantity.

Gain. X
Horizontally zooms to the graph of the selected quantity.

Pos. X
Adjusts the horizontal position of the graph of the selected quantity.

Dis. graph:
Displays the graph for the time trend of the quantities acquired when Dis. graph is enabled. See section Measure Panel.

En. Acq.
Enables the quantity acquisition when En acq is enabled.

En. Auto.
Enables the quantity view when En auto is active.
The buffer of the acquired value contains max. 1000000 terminals for 30 channels, is loop-type buffer and may be displayed by clicking the **Table** button.

NOTE During the automatic acquisition, some reading errors will be ignored and the buffer will include the last valid acquired value. If the connection is stopped, the device managing the automatic acquisition will stop and will restart once the connection is established again.

Acq. Time
Time interval (in seconds) between two acquisitions.

En. Pan.
Enables message output to the luminous panels. This is available when the Led. option is active.

Pan. Refr. T.
Time interval (in seconds) required to send messages to the luminous panels.

Delete
Clears the acquisition buffer.

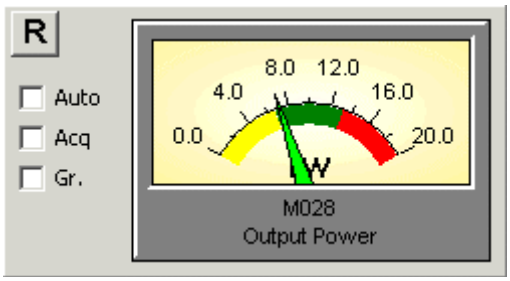
Table
Opens a print preview window showing the current acquisitions (section Print Preview Window for Acquired Data).

Print
Prints the graph. Printing is possible when no acquisition is in progress.

Set Acquisition Saving
Opens the window allowing scheduled saving of the acquisitions (section Acquisition Saving Settings Window).

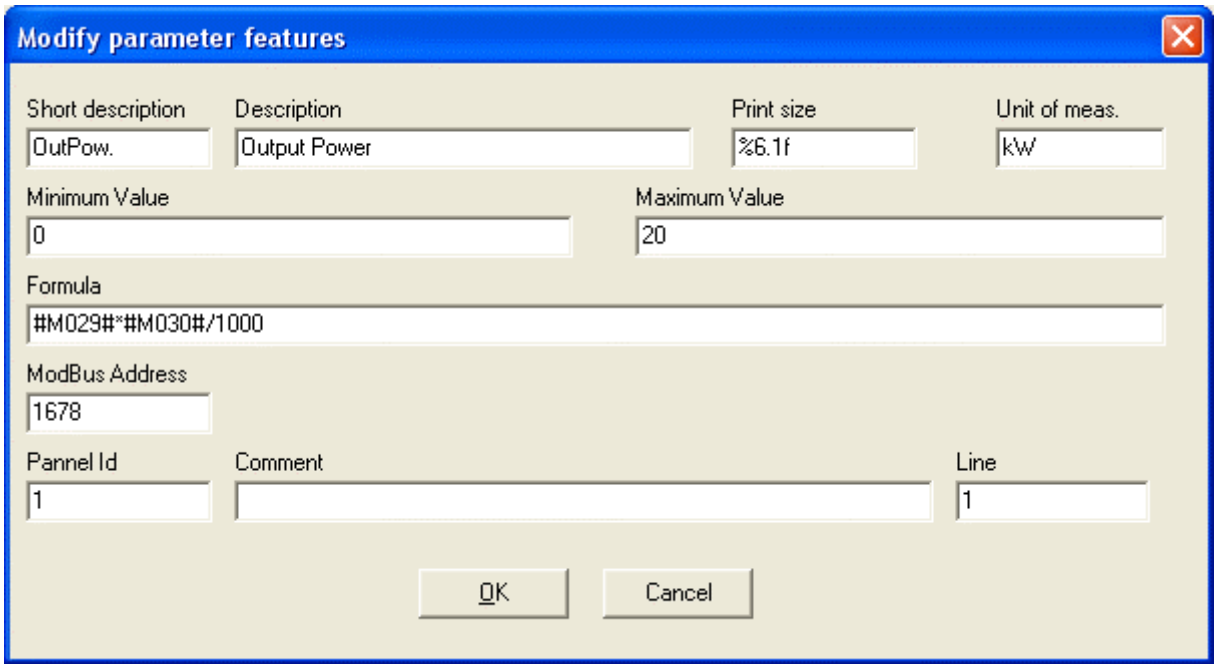
In case of multiple graphical display, you can display the values in the Y axis of the quantity by either clicking the value box (for analog values) or the LED icon (for a logic value). The same effect may be obtained by clicking the graph curve.

5.5.3.6. MEASURE PANEL WITH CUSTOM PROPERTIES



Certain measure panels allow to change the properties of the represented measure.

If this function is enabled, right-click to show Features; left-click to open the following:



Description of the customizable properties:

Short Description

Parameter description in the Treelist.

Description

Parameter description in the panel.

Print Format

The print format may be decimal (%d) or hexadecimal (%h).
The decimal format represents the display mode of a number with a decimal separator "%<width>.<decimals>d", where <width> is the character space and <decimals> indicate the decimal numbers following the separator.
Example:
Number 100.123 in "%10.2" format is printed as follows: " 100.12"
Hexadecimal representation is as follows: "%<width>h", where <width> is the character space.

Example:
Number "3F5" in "%5h" format is printed as follows: " 3F5"
Two additional formats are available, allowing to view work time, trip time, etc. They are marked with an S or an M. "S" is displayed as follows: "h..h:mm:ss", while M is displayed as follows: "h..h:mm:ss:zzz" ("zzz" stands for "milliseconds"). The units of the number to be displayed correspond to the seconds, while decimals are the fractions of a second.

Un.Meas.

Unit of measure of the numeric representation.

Minimum Value

Minimum value to be assigned to the measure (enables processing the graph scaling).

Maximum Value

Maximum value to be assigned to the measure (enables processing the graph scaling).

Formula

String representing the formula to be processed in order to obtain the parameter value. You can refer to parameters relating to different equipment at different addresses to obtain the parameter value. Express references as follows: #d:a:p#, where d is the equipment identifier, a is the address, and p is the parameter identifier.

Example: #ST1508:2:M003#.

You can refer to a value read directly from the modbus; the function syntax is the following:

@t:a:n

where

t indicates how the read value should be processed: **S**: integer with sign +/- (16 bits), **U**: integer with no sign (16 bits), **f**: float (32 bits);

a is the address of the device;
n decimal modbus address to be read.

Example: @S:1:1000+@U:2:1200*@f:3:100

5.5.3.7. OUTPUT PARAMETERS TO LUMINOUS PANEL

If the Led. option and En. Pan. are active, from the luminous panel you can read the value of the detected measure complete with its unit of measure every time interval set in Pan. Refr. T.

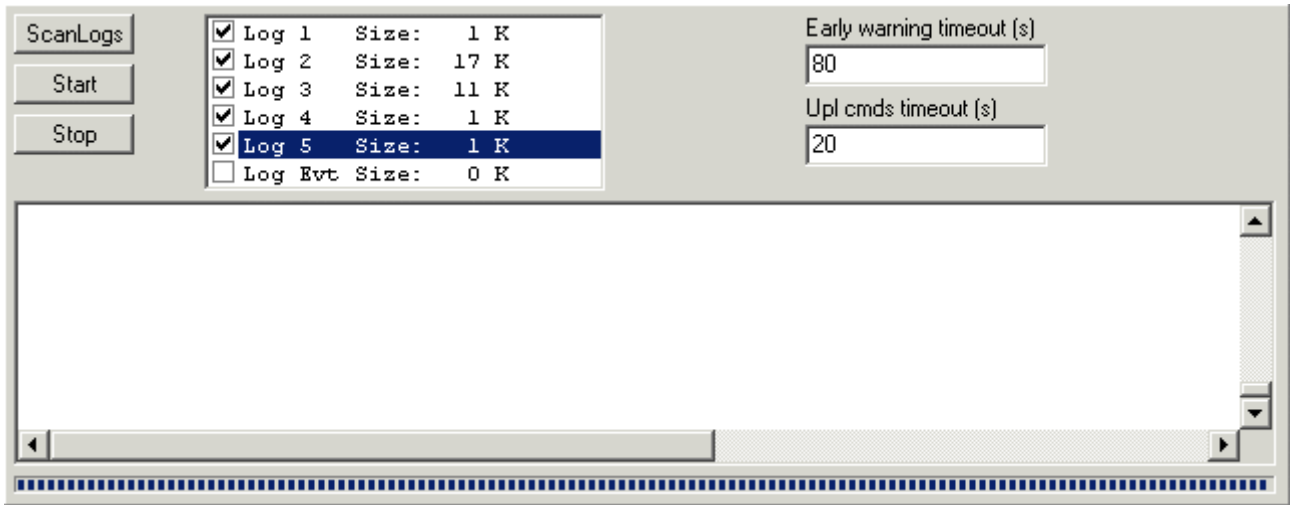
Panel Id
Panel Id required when multiple panels are connected to the same serial cable.

Comment
Text entered on the left of the value displayed.

Line
Indicates the position in the message queue to be sent to the luminous panel.
Supposing that multiple messages are to be displayed in one line of the luminous panel, messages will be displayed in sequence, line after line, as they were sent. **'Line'** also allows to define the position of the message in the message sequence (if Line=1, the first message will be displayed; if Line=3, message 3 will be displayed).

All changes will be saved to the project file.

5.5.3.8. PANEL FOR LOG UPLOAD FROM ES851



Panel allowing to upload the logs acquired from ES851.

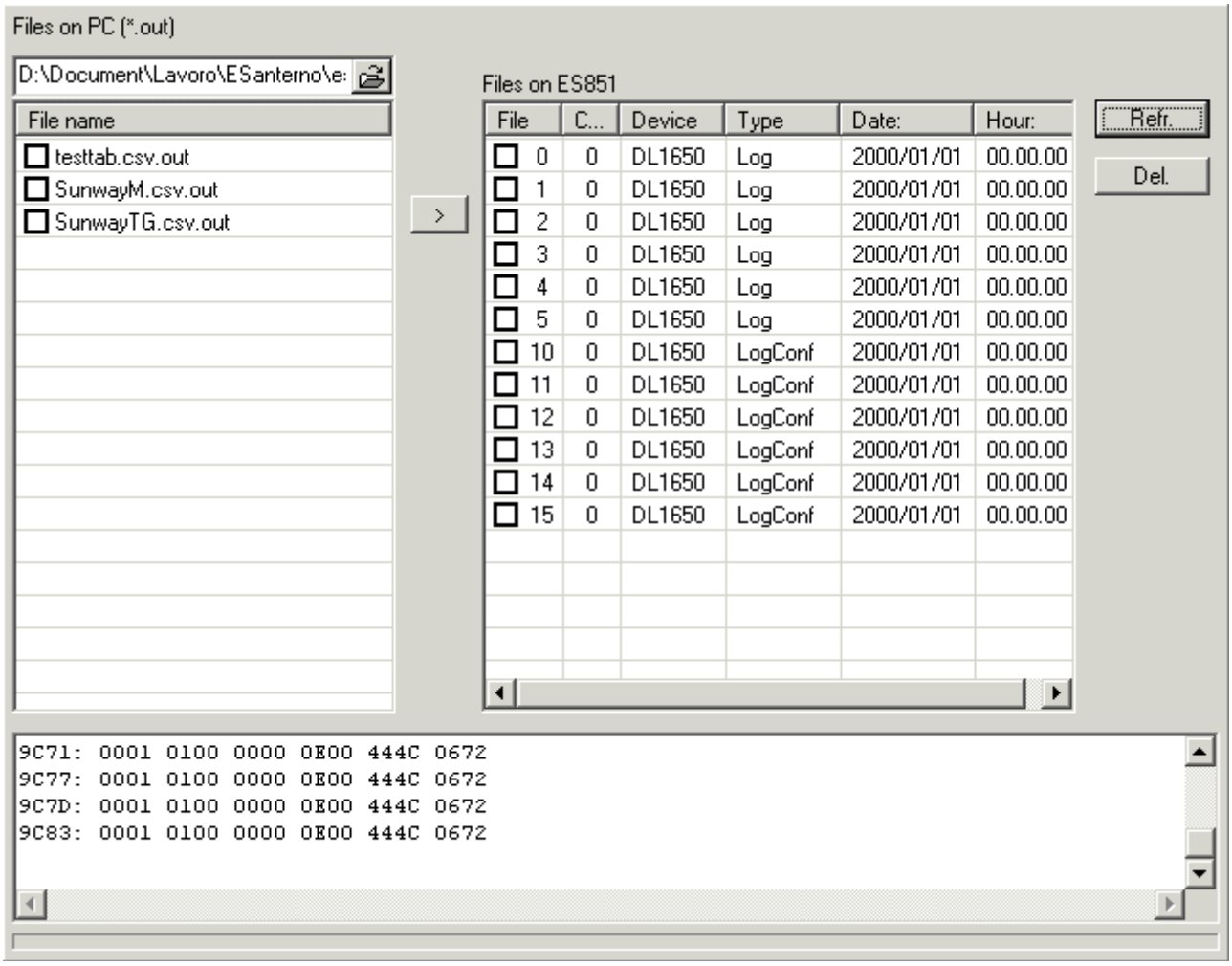
ScanLogs
Lists the quantity of data items to upload for each log.

Start
Starts the upload procedure: only the selected logs will be uploaded. Logs will be saved as separate CSV files (for acquisition logs, the prefix "1", "2"... will be added to the filename entered by the user, whereas the "Evt" prefix will be added to the event log).

Stop
Stops the upload procedure.

Do not change the default values set in **Early warning timeout** and **Upl cmds timeout**.
We suggest that no operation be carried out when uploading.

5.5.3.9. PANEL FOR LOG DOWNLOAD FROM ES851



This panel allows to download to ES851 the tables for the devices for automatic LOGGING.

Files on PC (*.out)
List of the files that can be downloaded to ES851.

: path to localize .out files.

File name
Name of the files that can be downloaded, preceded by a box to be selected to enable file download.

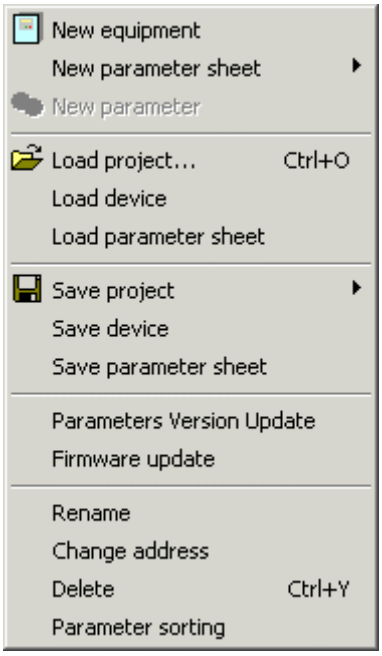
: the selected files can be downloaded.

Files on ES851
List of the files contained in the memory (Flash card) of ES851 Data Logger. The option box allows to delete each file (**Del.** button), **Cod.** (Device codification), **Device** (name of the device the filename relates to), **Type** (type of file) , **Date** and **Hour** (time when files are stored to ES851).

Refr. : refreshes the list of the files saved to ES851.

Del. : deletes the selected files from the Flash card of ES851.

5.6. File Menu



The File menu includes all the commands required for the control of the tree list for the following parameters: creation, saving, loading, deletion and editing.

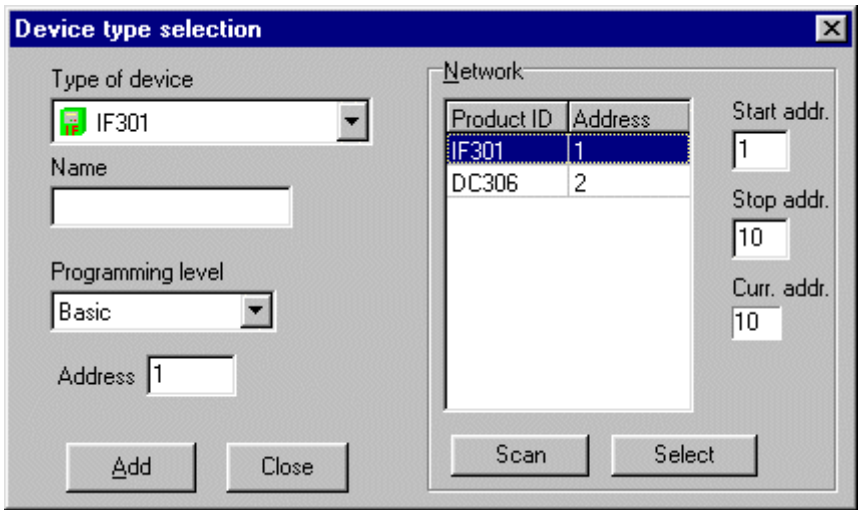
NOTE When you save the parameter list, you save the parameter value and its features, such as: its ID (e.g. P000), type (e.g. DC), firmware version (e.g. 306) and MODBUS address of the device it refers to. The same is true for the parameter loading.

The values of the parameters loaded from file are not automatically written in the device. If this is required, you have to write them using the "Write Selection" or "Write All" commands.

5.6.1. NEW DEVICE

Adds a new device and the relevant parameters to the TreeList.

NOTE During the uploading of the parameter list, the application will try to read the device value. If you are in off-line mode, the off-line error message will be displayed and the parameter will be set to the default value



Device type
The "Device type" combobox allows to select the device type and firmware version. The selection of one of the available versions automatically creates the relevant parameter list, whose structure depends on the programming level chosen by its combobox.
The list includes the "hybrid" item allowing to create a hybrid device (with no preset parameter list tree). Therefore, you can build a totally custom parameter list.

Name
Name of the device (optional).

Programming level
Determines the parameter list that will be entered in the parameter structure: for example the "Basic" programming includes the main parameters, whereas the "Advanced" programming includes a list with all parameters.

Address:
MODBUS address of the device.

5.6.2. DEVICE SCANNING

AUTOMATIC MODE:

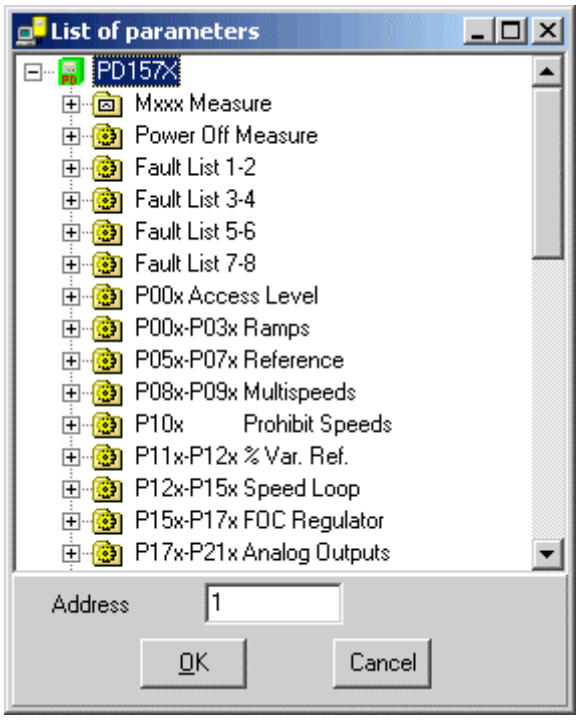
The **Network** groupbox in the **Device type selection** window (section New Device) allows to scan the connected devices. The acknowledged devices will be listed in the table, where you can select one of them along with the programming level (Basic, Advanced, Engineering). You can then add the device to the project by clicking the **Add** button.
Start Addr. and **Stop Addr.** allow to select the address field to scan (the max. value for **Stop Addr.** is 247).
Click Scan to start scanning and Stop Scan to stop.

MANUAL MODE:

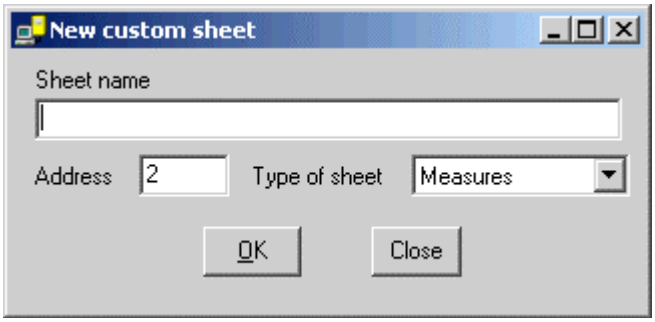
The devices that do not support the automatic detecting mode can be added to the project if selected from the **Type of device** combobox in the **Device type selection** window (section New Device). Their **Address** is required. Click **Add** to add the device to the project.

5.6.3. NEW PARAMETER SHEET

Creates a new parameter sheet in the selected device.
You can create a standard or custom parameter sheet. The standard sheet may be chosen from a preset list.
If the device is not hybrid, the list will include only the sheets associated with the device type and firmware version; otherwise, the list will contain the parameter sheet of the devices controlled by the software.
If you select a sheet and confirm your selection, the sheet will be created with all the parameters it contains. If you open the sheet and select one of the parameters it contains, once you confirm your selection, the system will create the sheet containing only the selected parameter.
If you change the address, this change will affect any parameters in the created sheet.



The custom sheet is blank and is to be filled in by the user. When a custom sheet is created, the following window will appear:



Sheet name:
Name assigned to the sheet.
Address:
Address proposed each time a parameter is added to the sheet.
Type of Sheet:
It can be a Measure or Parameter sheet.

5.6.4. NEW PARAMETER

Adds a parameter to the selected sheet.
If the sheet is a standard one for a non-hybrid device, the parameter list related to the parameter sheet will be displayed. If the sheet is a custom one for a non-hybrid device, the list of the parameters related to the device owning the sheet will be displayed. If the sheet is owned by a hybrid device, the whole parameter list will be displayed, i.e. all the parameters for the devices controlled by the application will be displayed.

5.6.5. LOAD PROJECT

Loads from disk the data and structure of a project. The current project window is deleted. The extension of the project files is "prj".

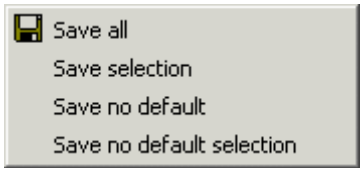
5.6.6. LOAD DEVICE

Loads from disk the data and structure of a device and enters it in the project. The extension of the device files is "dev".

5.6.7. LOAD PARAMETER SHEET

Loads from disk the data and structure of a parameter sheet and enters it in the selected device. The extension of the parameter sheet files is "sht".

5.6.8. SAVE PROJECT



5.6.8.1. SAVE ALL

Saves the whole project.

5.6.8.2. SAVE SEL.

Saves the parameters relating to the selected objects.

5.6.8.3. SAVE NO DEFAULT

Saves the parameters having different values than the default values.

5.6.8.4. SAVE SEL. NO DEFAULT

Saves the parameters relating to the selected objects having different values than the default values.
For each option, the following items are also saved: display settings, connection settings, position and size of the windows relating to the current project.
Project files have a "prj" extension.

5.6.9. SAVE DEVICE

Saves to disk the data and structure of the selected device. The extension of the device files is "dev".

5.6.10. SAVE PARAMETER SHEET

Saves to disk the data and structure of the selected parameter sheet. The extension of the parameter sheet files is "sht".

5.6.11. PARAMETER VERSION UPDATING

Opens the window allowing parameter version updating. See section Parameter Updating Window.

5.6.12. REFRESH FIRMWARE

Opens the firmware download utility of the equipment; see section Device Firmware Upgrade Window.

5.6.13. RENAME

Allows to enter a new name for the selected sheet or device.

5.6.14. CHANGE ADDRESS

Changes the address for all parameters of the selected object.

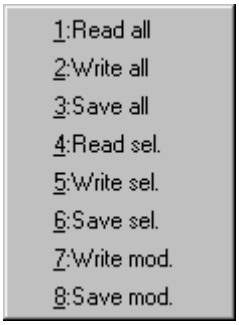
5.6.15. DELETE

Deletes the selected object.

5.6.16. PARAMETER SORTING

Sorts the parameter list in alphabetical order.

5.7. Parameters Menu



Menu for the parameter reading and writing commands:

5.7.1. READ ALL

Reads from the devices all parameters listed in the TreeList.

5.7.2. WRITE ALL

Writes to the devices all parameters listed in the TreeList.

5.7.3. SAVE ALL

Saves to the devices' EEPROM all the parameters listed in the TreeList.

5.7.4. READ SELECTED

Reads from the devices the parameters related to the selected object.

5.7.5. WRITE SELECTED

Writes to the devices the parameters related to the selected object.

5.7.6. SAVE SELECTED

Saves to the devices' EEPROM the parameters related to the selected object.

5.7.7. WRITE MODIFIED

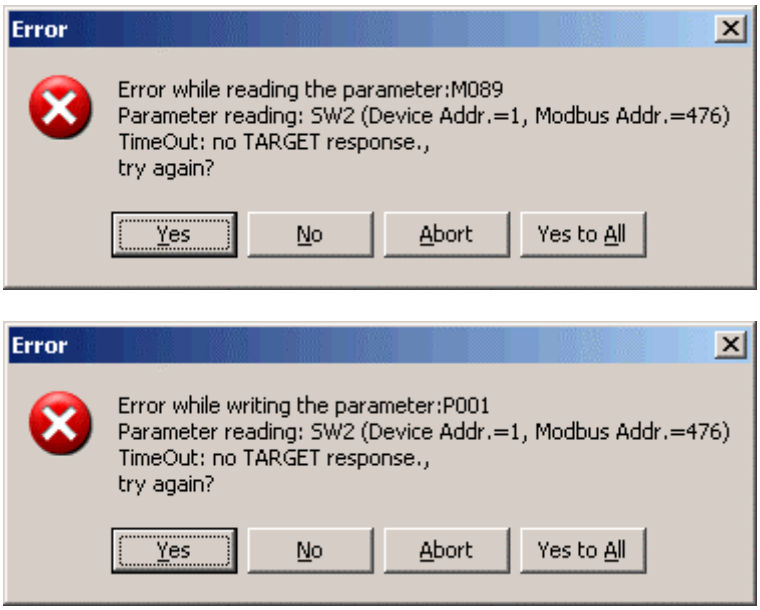
Writes to the devices the modified parameters that have never been written.

5.7.8. SAVE MODIFIED

Saves to the devices' EEPROM the modified parameters that have never been written.

5.7.9. ERROR CONTROL WHILE READING OR WRITING PARAMETER SETS

One of the following windows is displayed in case an error occurs when a parameter set is read or written:



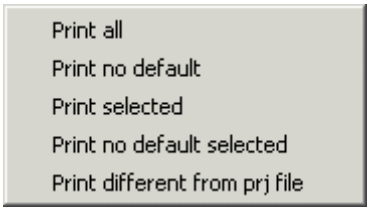
Select:
Yes, to repeat the operation responsible for the error; if a positive result is obtained, the next parameters are processed, otherwise an error window appears.
No, interrupts the process for the current parameters and goes on with the next parameter.
Abort, the process is interrupted and cannot be resumed.
Yes to All, goes on with the next parameter and overrides the parameter that caused the error, but with a stronger read cycle: the error condition will occur after the following sequence:

<4 attempts> ---- <pause 2 seconds> ---- <4 attempts> ---- <pause 2 seconds> ---- <4 attempts>

This is particularly useful for disrupted environments.

NOTE To reduce or suppress error messages, either decrease the ModBus block max. length while reading (see section Options Window) or increase Timeout values (see section Remote Timeout or Timeout depending on the type of connection).

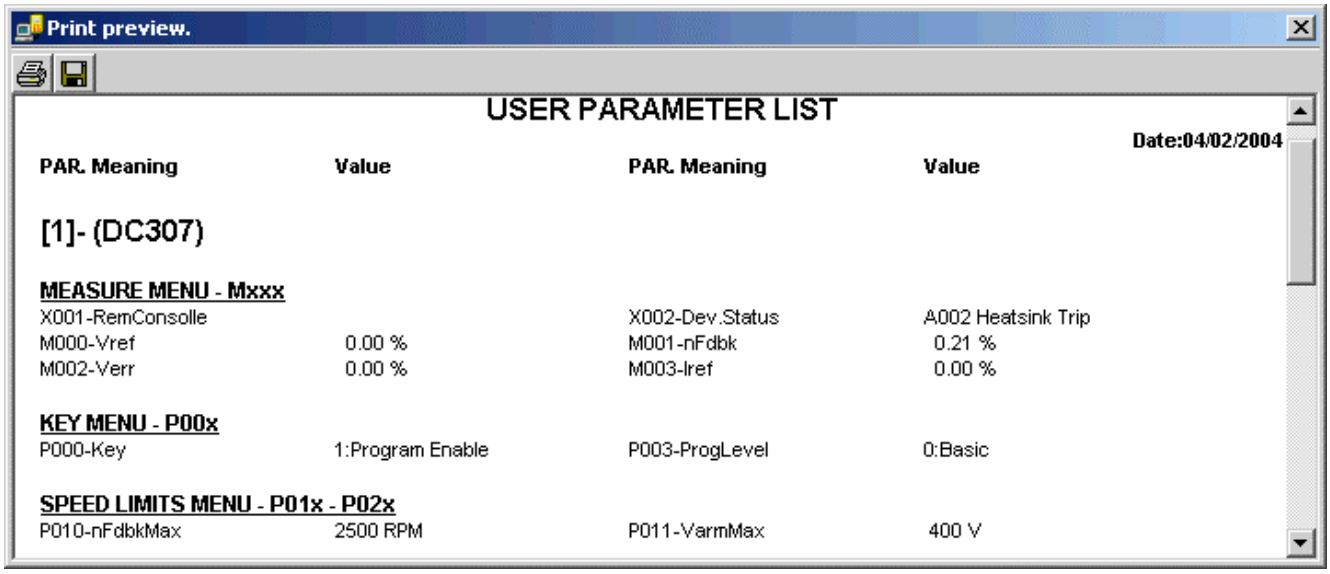
5.8. Print Menu



Parameter print command menu.

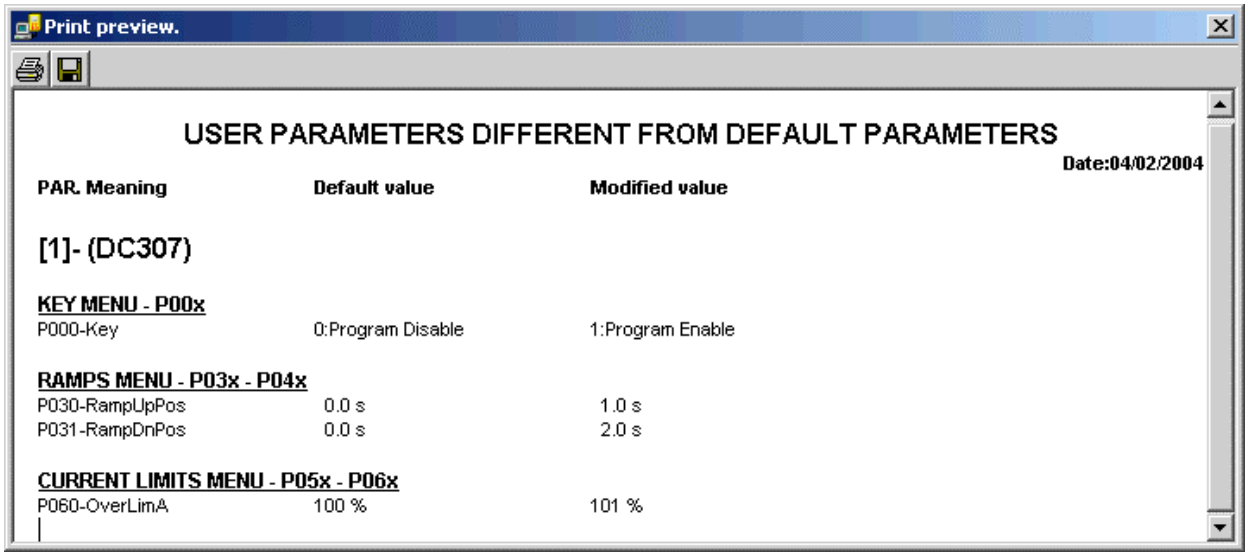
NOTE Unread values, usually due to communication errors, will be represented with a sequence of asterisks"*****".

5.8.1. PRINT ALL



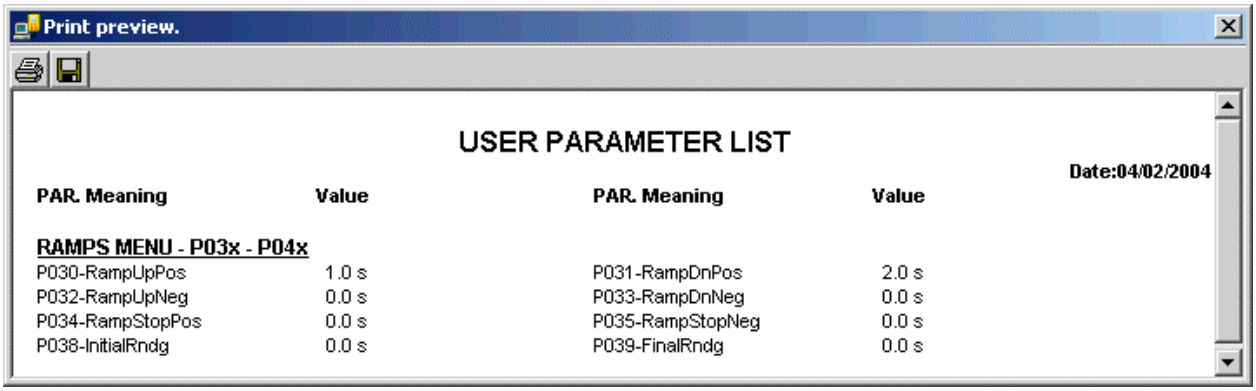
Prints the whole list of the parameters contained in the TreeList.

5.8.2. PRINT NON-DEFAULT PARAMETERS



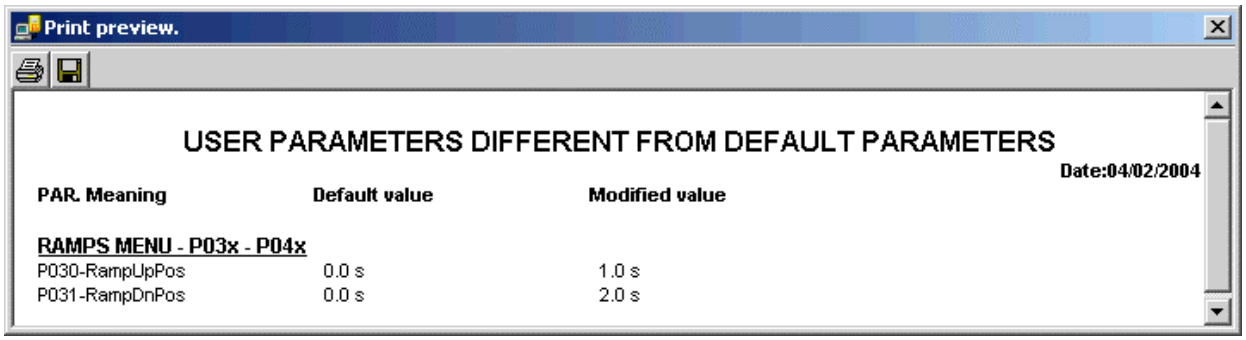
Prints the whole list of the parameters represented in the TreeList whose value mismatch with the default value.

5.8.3. PRINT SELECTION



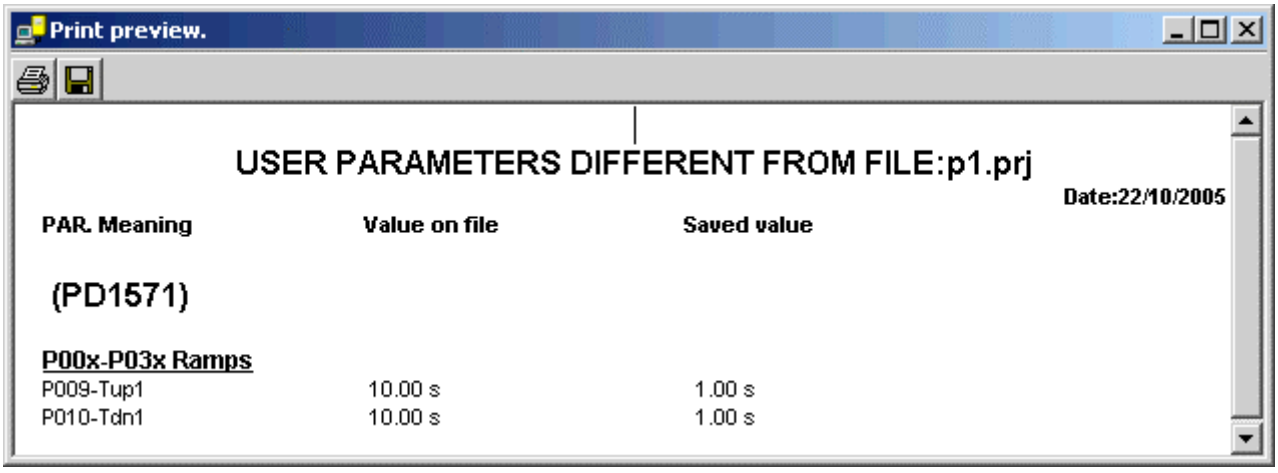
Prints the parameter list related to the selected object.

5.8.4. PRINT NON-DEFAULT SELECTION



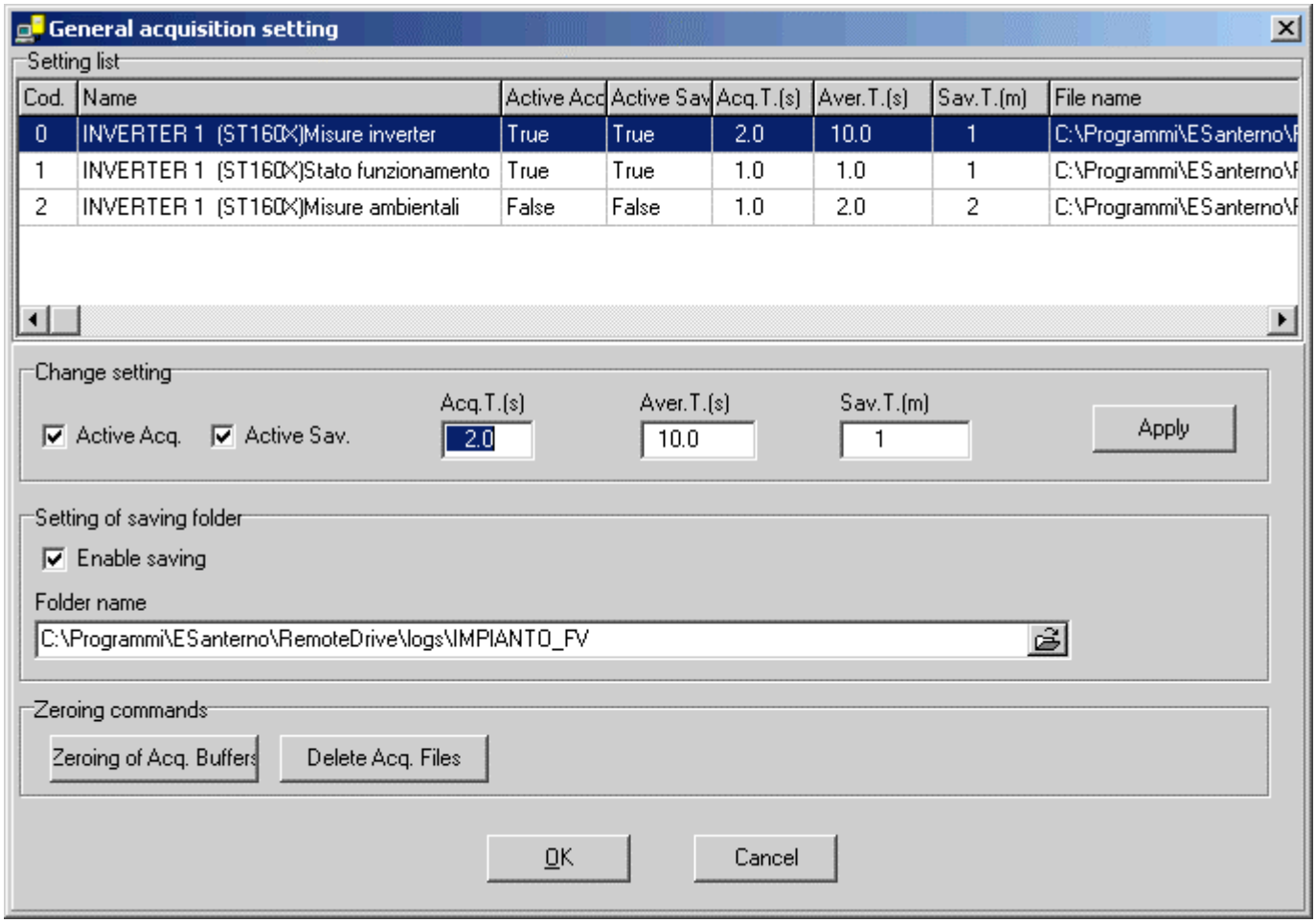
Prints the parameter list related to the selected objects whose value mismatch with the default value.

5.8.5. PRINT DIFFERENT FROM FILE *.PRJ



Compares the values of the project parameters stored to the values saved to a specified file and prints the list of the different parameters. If a stored parameter has no corresponding value, it is marked with "<not found>".
The stored values are the values stored in the computer, not in the equipment.

5.9. Acquisition General Settings Window Menu



The window called Acquisition General Settings prepares the system to an acquisition process allowing to save to one folder any data resulting from the different measure sheets, as stated in section Saving Folder Settings.

Procedures for the Acquisition Process

1. Stop the acquisition engine.
2. Use Acq. to choose the measure parameters to be acquired from the measure sheets; see section Measure Panel.
3. Open the window.
4. Set the average acquisition times and saving times; see section
5. Define the name of the folder for the acquisition files and enable saving; see section Saving Folder Settings.
6. Reset the acquisition buffers and delete the old acquisition files if necessary;:see section Reset Commands.
7. Close the window.
8. Start the acquisition engine.

5.9.1. SETTING LIST

The "Settings List" table lists all measure sheets in the project. Each line corresponds to one sheet.
Description of the columns in the table:

5.9.1.1. COD.

Progressive number of the measure sheet.

5.9.1.2. NAME

Name of the measure sheet.

5.9.1.3. ACTIVEACQ.

Indicates if the acquisition is active: *True=Active False=Inactive*. It corresponds to: **En. Acq.** in Graph Panel and Acquisition Table.

5.9.1.4. SAVEACTIVE

Scheduled saving to file is active: *True=Active False=Inactive*. It corresponds to: Enabled.

5.9.1.5. T.ACQ(S.)

Delay between two acquisition events expressed in seconds. It corresponds to: **Acq.Time** in Graph Panel and Acquisition Table.

5.9.1.6. AVER.T.(S.)

Average time. Delay allowing to process the average number of the registered samples. This is expressed in seconds. It corresponds to: Average Every:.

5.9.1.7. SAV.T.(M.)

Delay for the acquisitions to be saved to file. This is expressed in minutes and corresponds to: Save to File Every:.

5.9.1.8. FILE NAME

Path with the name of the CSV file for the acquisitions related to the measure sheet. It corresponds to: File Name:.

5.9.2. CHANGE SETTINGS

Panel allowing to change the values in the table. Select a line in the table to automatically reproduce the relevant parameters in the panel. Press Apply to confirm changes.
If multiple lines are selected in the table, changes will be applied to all the selected lines.
The file name cannot be changed. To change the file name, use File Name:.

5.9.3. SAVING FOLDER SETTINGS

Panel for the configuration of the "autosave" function to one folder of the acquisitions in the project. Enter folder name in: **Folder Name**.
If this function is enabled (**Enable Saving**), the file name saving the acquisitions of each measure sheet is no longer customizable but will be forced to the following formula:
<contents of Folder Name> + <month and year mmm-yyyy> + <name of the equipment > + <name of the measure sheet> + <extension csv>. Blanks (if any) are replaced with "_".
Example:
C:\Programmi\ESanterno\RemoteDrive\logs\IMPIANTO_FV\ago-2005\INVERTER_1__(ST150X)Misure_inverter.csv
C:\Programmi\ESanterno\RemoteDrive\logs\IMPIANTO_FV\ago-2005\INVERTER_1__(ST150X)Stato_funzionamento.csv
C:\Programmi\ESanterno\RemoteDrive\logs\IMPIANTO_FV\ago-2005\INVERTER_1__(ST160X)Misure_ambientali.csv
The "mmm-yyyy" item is created based on the computer clock. The acquisition files will be divided by subfolders corresponding to the month and year when they were saved.

5.9.4. RESET COMMANDS

5.9.4.1. RESET ACQ.BUFFERS

Resets all acquisition buffers for the measure sheets.

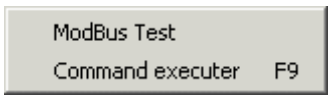
5.9.4.2. DELETE ACQ. FILES

Deletes all files containing the acquisitions of the current folder (use with caution!).
Example:
With reference to the example above, this would delete the contents of "C:\Programmi\ESanterno\RemoteDrive\logs\IMPIANTO_FV\ago-2005". Backup files (*.bak) are not deleted.

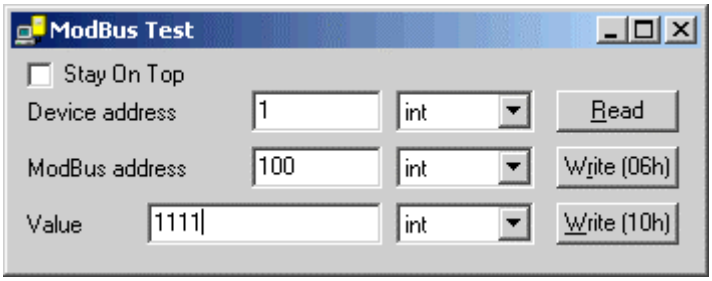
5.10. Chat Menu

If a Remote Connection is active, this menu recalls the Chat window (see section CHAT Window).

5.11. Tools Menu



5.11.1. ModBus Test



Test window allowing to read/write values directly from/to Modbus.
Acknowledged formats:

int	16-bit decimal, plus/minus
uint	16-bit decimal integer
hex	16-bit hexadecimal
bin	16 binary
char	Pair of ASCII characters (high byte: left-hand character; low byte: right-hand character
float	4-byte float standard IEEE-754

Brings the window to front.

Allows reading using the following command: 03 (0x03) Read Holding Registers (1).

Allows writing using the following command: 06 (0x06) Write Single Register (1).

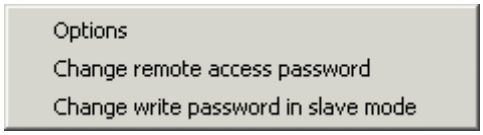
Allows writing using the following command: 16 (0x10) Write Multiple registers (1).

(1) Please visit:
http://www.modbus.org/docs/Modbus_Application_Protocol_V1_1a.pdf

5.11.2. Command Executer

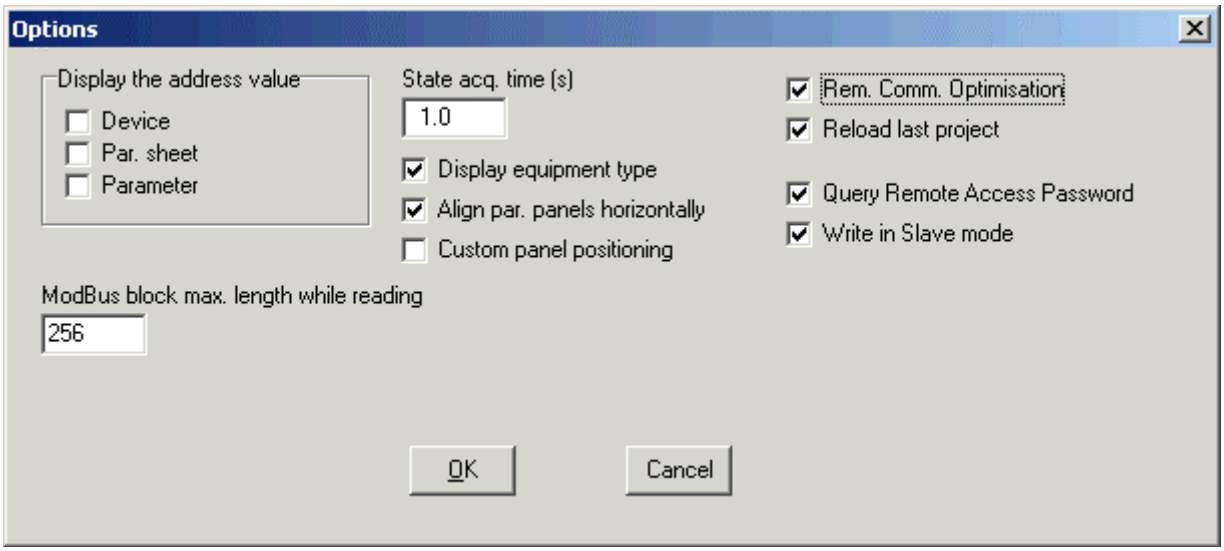
Allows to execute a batch file directly from the Remote Drive.

5.12. Configuration Menu



The Configuration menu includes the Options window. If the remote access password and the 'write password in slave mode' are enabled, this menu allows to access the editing windows for those passwords.

5.12.1. Options Window

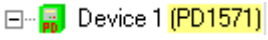


Display the address value:
Selection options to enable or disable the device address, parameter sheets and parameters in the TreeList.

ModBus block max. length while reading:
Sets the maximum number of subsequent words that can from one block (minimum value:1; maximum value: 256).
This means that a high value increases the reading speed of the parameters from ModBus.

CAUTION This value shall be lower than or equal to the maximum size of the Modbus block managed by the device.

State acquisition time
Time interval, in seconds, of the device state polling.

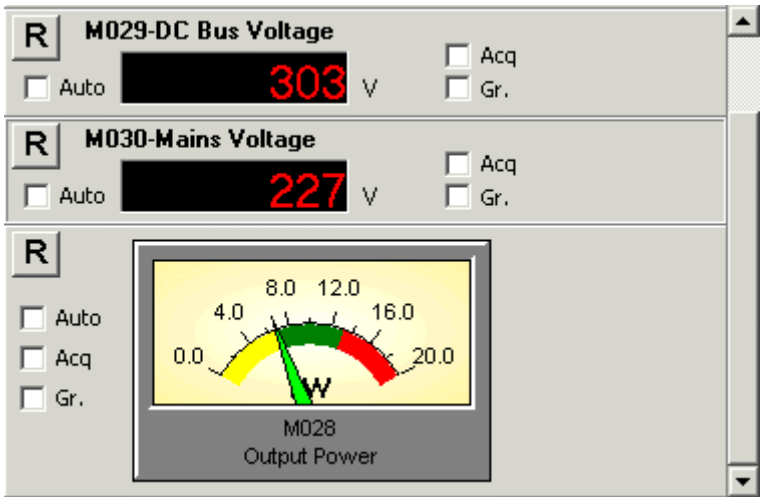
View Type of Equipment
Views the type of equipment in brackets near the name 

NOTE Editing will have effect when the project is next loaded.

Arrange Par. Panel Horizontally

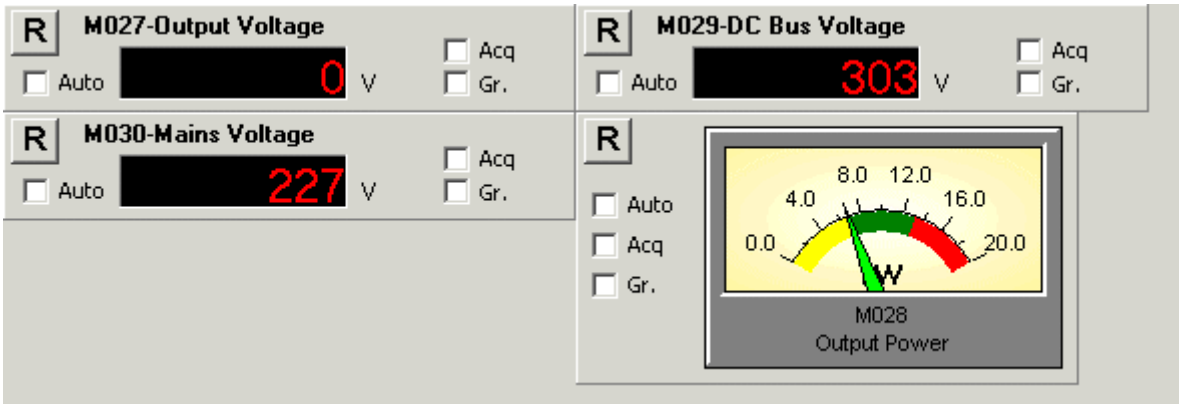
Arranges measure panels from upwards to one column

Align par. panels horizontally



If inactive, it arranges panels from left to right depending on the horizontal space available in the sheet:

Align par. panels horizontally



NOTE This is active for measure sheets only . Editing will have effect when the parameter sheet is next changed.

Custom Panel Position

The position of the measure panels is customizable and is stored to the project file.
To move one panel to a different position, use the mouse to drag the selected panel while holding down **Ctrl** (always point to the background of the selected panel).

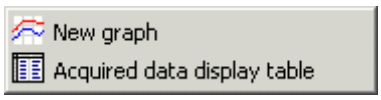
Remote Communications Optimization
Optimizes data acquisition time and data transfer rate when slow connections are used. This is particularly useful for remote acquisition with Internet connections.
Acquisition times are managed by the slave server, which sends data acquired from the master server by taking advantage of the benefits of the TCP protocol. If communications slow down, this will no affect the acquisition time.

NOTE The function settings must be the same both for Remote Drive configured as a slave and for Remote Drive configured as the master.

NOTE Connections to plants implementing ES851 Data Logger board don't support the Remote Communications Optimization function.

Reload Last Project
The last project that has been saved is loaded at startup; if the project was saved with an active connection, it also restores the connection.
Enter Remote Access Password
Allows to set an access password in **Slave server** mode. Initially, the default password is used, then the user-defined password (from the **Config. -> Change Remote Access Password** menu) will be used.
Write in Slave Mode
Enables writing and saving parameters in slave mode: see section Mode. A password is required; initially, the default password is used, then the user-defined password (from the **Config. -> Change Write Password in Slave Mode** menu) will be used.
Opens the window of the firmware download utility of the equipment

5.13. Data Menu

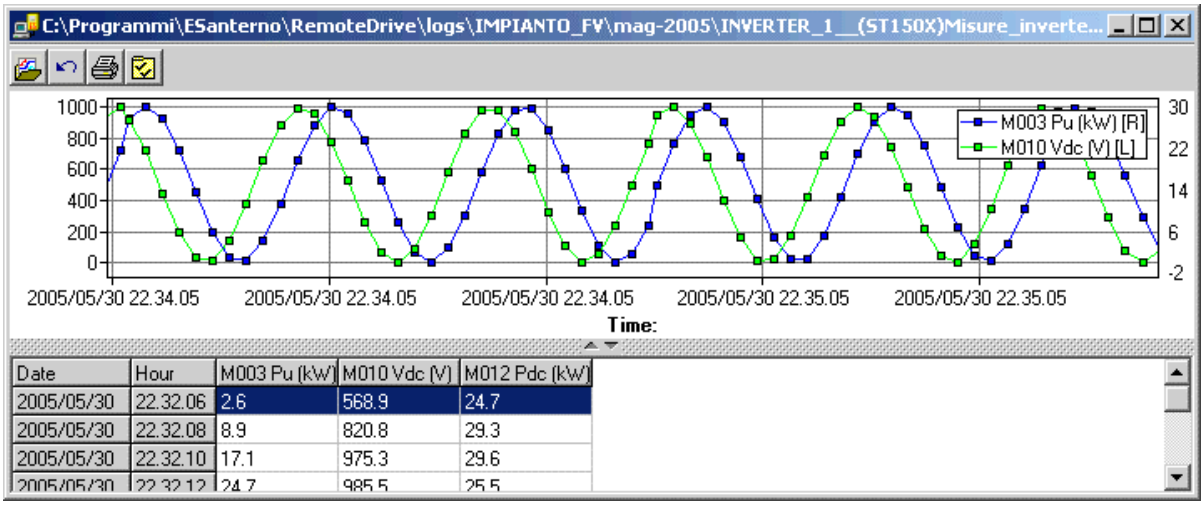


Menu for the analysis of acquired data.

New graph
Opens a new window for the graph display (section Graph Window).

Acquired data display table
Opens a new window for the data display (section Acquired Data Display Window).

5.13.1. Graph Window



Data acquired from the Remote Drive or ES851 to CSV files are viewed and graphically represented in the Graph window.
Zoom in: select a graph region with the mouse and hold down the Shift key.
To move the graph: drag the graph with the mouse and hold down Ctrl.
To return to the initial condition: hold down the Shift key and left-click.

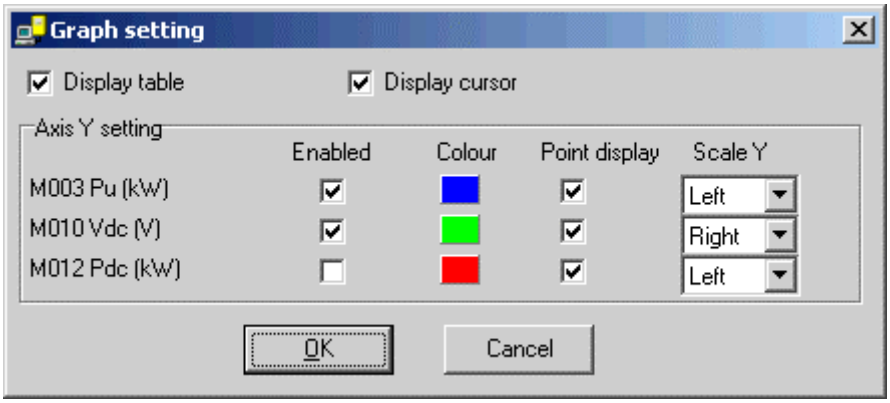
Selects a CSV file.

Refreshes display; this is useful to collect the latest data when the file is being acquired.

Print graph.

Graph settings, see section Graph Settings Window.

5.13.2. GRAPH SETTINGS WINDOW

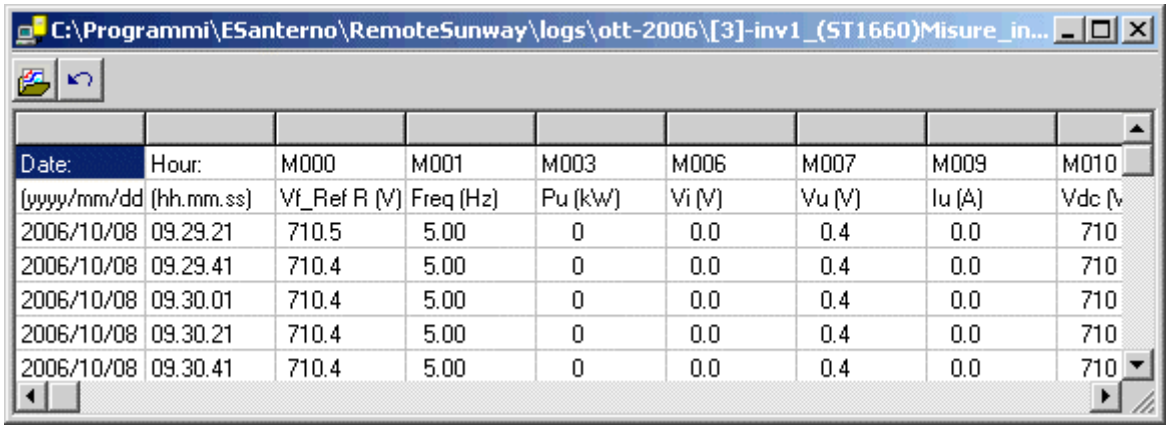


View Table
Views the table with graphically represented values.

View Cursor
Views a cursor to localize the graph region corresponding to the line selected in the data table.

Setting Y axes:
Enabled
Views the graph of the selected variable.
Colour
Colour of the pattern corresponding to the selected variable: click a colour to apply it to the pattern.
ViewPoints
Highlights the points corresponding to the data in the table.
ScaleY
Selects the scaling of the selected variable on the right/left Y axis in the graph.

5.13.3. ACQUIRED DATA DISPLAY WINDOW



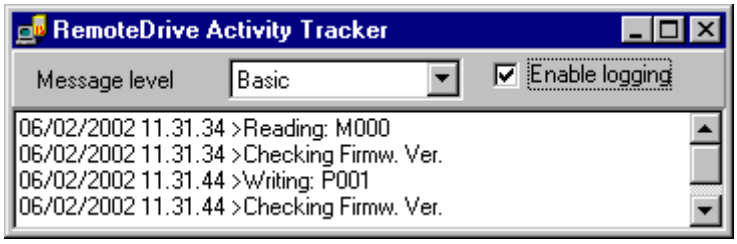
Date:	Hour:	M000	M001	M003	M006	M007	M009	M010
(yyyy/mm/dd	(hh.mm.ss)	Vf_Ref R (V)	Freq (Hz)	Pu (kW)	Vi (V)	Vu (V)	Iu (A)	Vdc (V
2006/10/08	09.29.21	710.5	5.00	0	0.0	0.4	0.0	710
2006/10/08	09.29.41	710.4	5.00	0	0.0	0.4	0.0	710
2006/10/08	09.30.01	710.4	5.00	0	0.0	0.4	0.0	710
2006/10/08	09.30.21	710.4	5.00	0	0.0	0.4	0.0	710
2006/10/08	09.30.41	710.4	5.00	0	0.0	0.4	0.0	710

Views the data acquired in CSV files.

Select a CSV file.

Refresh view; allows to read the latest data being acquired.

5.14. Activity Tracker Menu



Window related to the Remote Drive logbook.
The log, if enabled, stores the Remote Drive activity (parameter reading and writing, communication errors, and so on).
Each recorded message is displayed with the date and time and is stored in the "LogBook.txt" file. This file is never deleted; the application only adds new messages to the file. The logging is disabled by default, and is to be enabled only when required. If the Remote Drive activity is heavy, the "LogBook.txt" file size will remarkably increase. If you are not interested in the contents of "LogBook.txt" you can delete them; the application will automatically rebuild them when required.

Message level:
Four message classes are available:

1. "Acq": views errors and events for saving to file of the current acquisitions
2. "Basic": views errors and ordinary read/write parameters to modbus
3. "Advanced": like "Basic", plus contents of remote communications messages
4. "Engineering": like "Advanced", plus detailed modbus activity.

Enable logging:
Enables the function of Remote Drive Logbook.

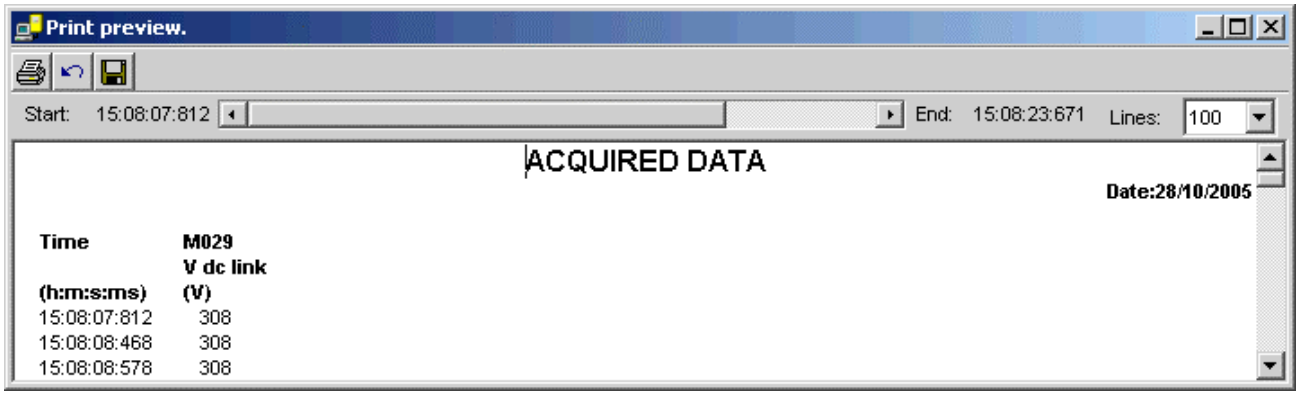
5.15. Window Menu

The Remote Drive allows to **Horizontally** or **Vertically** arrange the open windows, or to recall a window from the background.

5.16. Help Menu

The Help menu allows to access the Table of contents of the on-line manual (**On-line User's Guide**). It also implements the **? Help on...** allowing to view the online user's guide related to the selected topic (when pointing to a function of the Remote Drive). The **About** window includes information about the Remote Drive.

5.17. Print Preview Window for Acquired Data



The text can be modified, so you can enter some comments.

Prints the document contents.

Updates the acquisition list.

Saves the list to disk in RTF or CSV format.
CSV format may be read by any electronic sheet, so you can use it for additional changes.

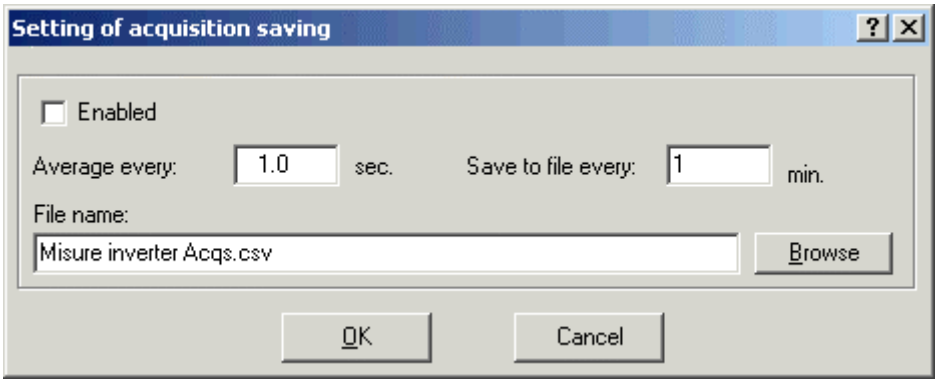
This scrollbar allows to display some samples stored from any position; this is useful when the acquisition list becomes longer and longer.

This combobox allows to choose the amount of acquisition lines to be displayed in the window.

CAUTION

When this function is active, do not open the file with applications privileging this type of file (e.g. MS Excel), otherwise Remote Drive will not be capable of saving the file.

5.18. Acquisition Saving Settings Window



Window containing the configuration panel for scheduled saving to file of the acquired data related to the active measure sheet.

5.18.1. Enabled

Save to file: active.

5.18.2. Average Every:

Saves to file the average number of the acquired data depending on the preset delay. Set an average time equal to or multiple of the acquisition time. If the average time is the same as the acquisition time, data is saved to file with no average time processing.

5.18.3. Save to File Every:

Delay for saving to file.

5.18.4. File Name:

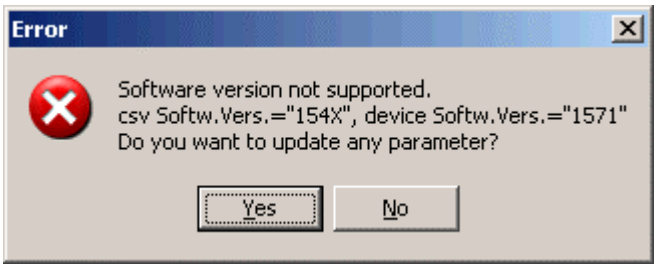
Path including the name of the file for data saving.
Whenever data is saved, the system verifies that the file is present; if so, a backup file (same file name with a .bak extension) is created and data acquired in the preset time interval are appended; otherwise, the file is created and data acquired in the preset time interval is saved.
The format of the saved file is CSV; separators and punctuation marks comply with the international options and the options of the language of the operating system.

CAUTION

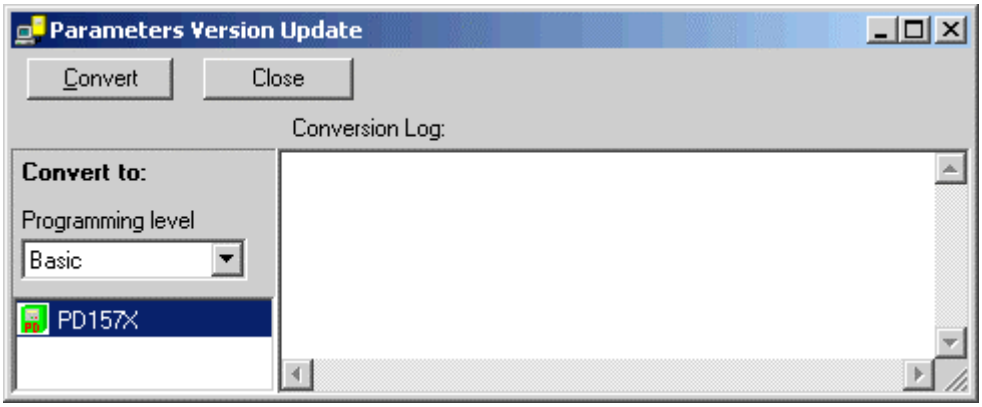
When this function is active, do not open the file with applications privileging this type of file (e.g. MS Excel), otherwise Remote Drive will not be capable of saving the file.

5.19. Parameter Updating Window

This window is used to update the parameters of the previous version that are saved to a .prj file.
This window pops up when you confirm the following message:



that appears when you try to write parameters loaded from a file to a drive where the new parameter version is installed.



Before starting the conversion procedure, choose the programming level for the integration of the parameter set to be converted.**Conversion is to be done when the equipment is connected.**

Press the "Convert" button to start parameter conversion. This includes three steps:

1. Uploading of the selected parameter set.
2. Integration of the old parameters in the new parameter set.
3. Writing of the new parameter set to the equipment “on-line”.

If no drive is on-line, the parameter version can be updated off-line by selecting the "Parameter Version Updating" command in the File menu. Step 3 is not performed when the equipment is off-line.

Conversion Log:

This box lists the results of the conversion of each parameter. The conversion results are saved to a text file ("ParamUpdate.log") included in the "logs" folder in Remote Drive.
Below is a list of the possible messages and their description:

Old Ver. Value New Ver. Value

PD100X: P001= 2.00 ---> PD151X: P001= 2.00 OK
Parameter conversion was successful.

Old Ver. Value New Ver. Value

---> PD151X: I073= 1.00 OK
This parameter is not to be found in the previous version.

Old Ver. Value New Ver. Value

P185= 0.00 ---> PD151X: P184= 0.00 <<Id changed>>
New parameter Id (from P185 to P184).

Old Ver. Value New Ver. Value

PD100X: C023= 400.00 ---> PD151X: C023= 320.00 <<too high, Clipped>>
Truncated parameter value (in the latest version, the maximum value for C023 is 320.00, so the old value has been truncated to 320.00).

Old Ver. Value New Ver. Value

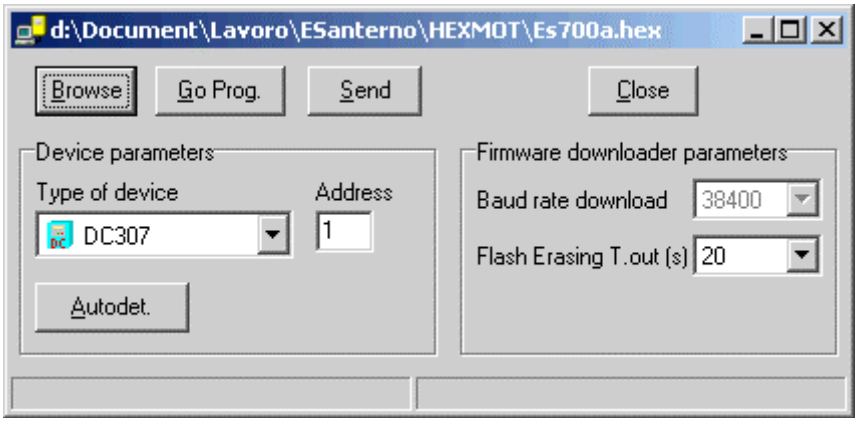
PD100X: C024= 10.00 ---> PD151X: C024= 50.00 <<too low, Clipped>>
Truncated parameter value (in the latest version, the minimum value for C024 is 50.00, so the old value has been truncated to 50.00).

Old Ver. Value New Ver. Value

PD100X: C008= 22.00 ---> PD151X: C008= 22.00 <<Cannot write is readonly!>>
The parameter cannot be written because it is readonly at the moment.

5.20. Device Firmware Upgrade Window

Use this panel to upgrade the device firmware.
Before this window opens, you have to enter the name of the hexadecimal file (*.hex or *.mot) containing the new firmware version. When the window is open, you can change the upgrade file by clicking the "Browse" command:



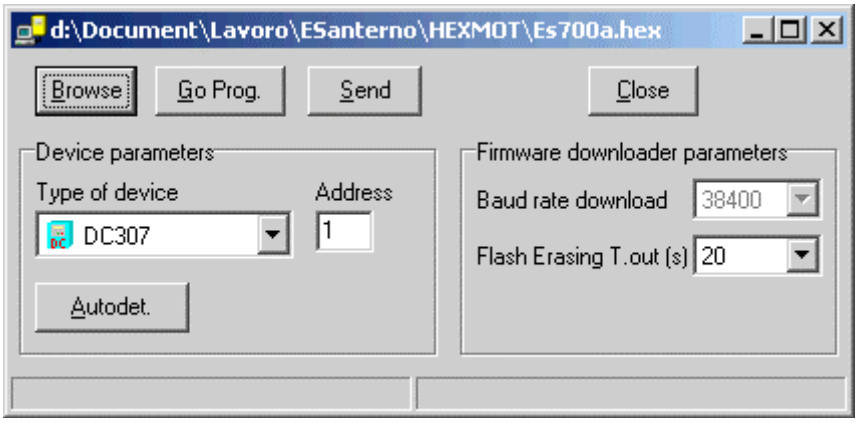
Device type
Device type and firmware version to be updated. The "Autodetect" button, if available, allows the automatic detection of the device type and firmware version.

Address
MODBUS address of the device.

Download baud rate (bps)
Data transfer speed during download (modifiable for **PD** and **PB** types devices only).

Flash Erasing T.out (s)
Max. time in sec. between flash erasing command and response after erasing.

5.20.1. DOWNLOAD PROCEDURE FOR DC TYPE DEVICES - DCREG (DC)



firmware download

1. In case of multidrop connection (RS485), only the device to be upgraded is to be left connected to the network.

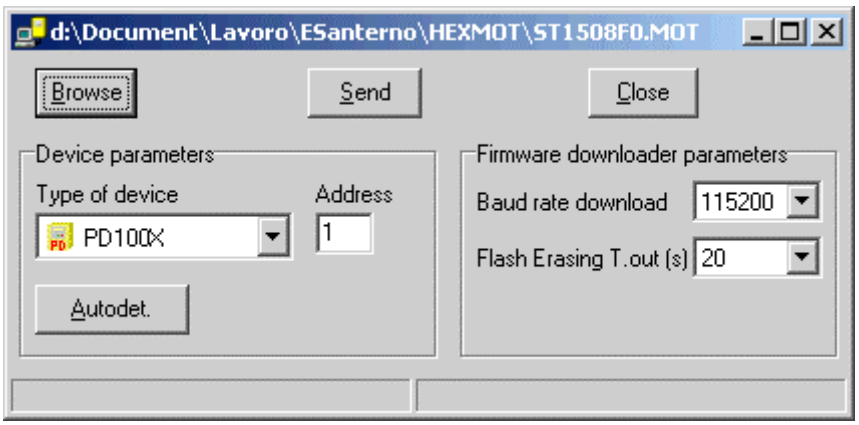
2. Choose the right type of device and address.

3. Click "Go prog". This command checks if the selected device type is valid and if the upgrade file complies with it. In this case, it sends a preliminary upgrade command to the device.

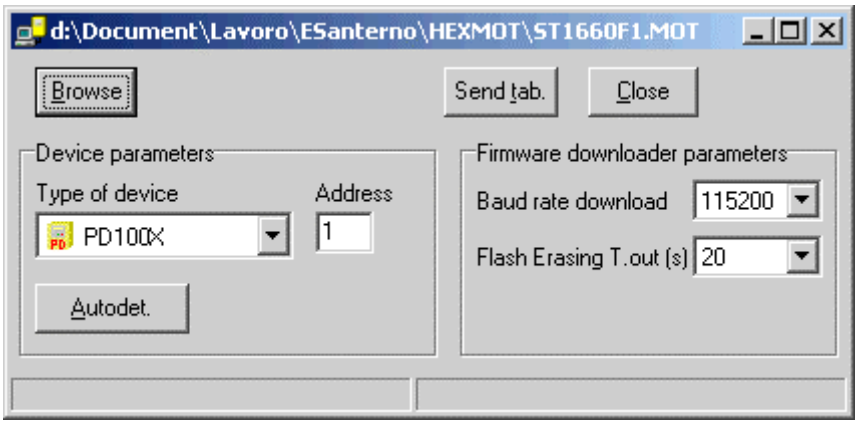
4. You can now start writing the device internal flash memory by clicking "Send". The flash memory writing procedure is preceded by an erasing stage that will last a few seconds. This is controlled by a timeout procedure (see "Flash Erasing T.out") allowing to detect any interruption of this stage. When the timeout is over, if the erasing continues, the procedure will stop and a time-out message will be displayed.

5.20.2. DOWNLOAD PROCEDURES FOR IPL (IP) EQUIPMENT, SINUS PENTA (PD) DRIVE AND RELEVANT APPLICATIONS (PX)

Two download procedures are allowable: firmware or MMI table. Both of them make use of *.mot hexadecimal files; the distinction between them is made by means of the file name: if it terminates with F0 is firmware; if it terminates with F1 is an MMI table.
According to the type of the selected file the application makes the command buttons necessary to operate allowable.



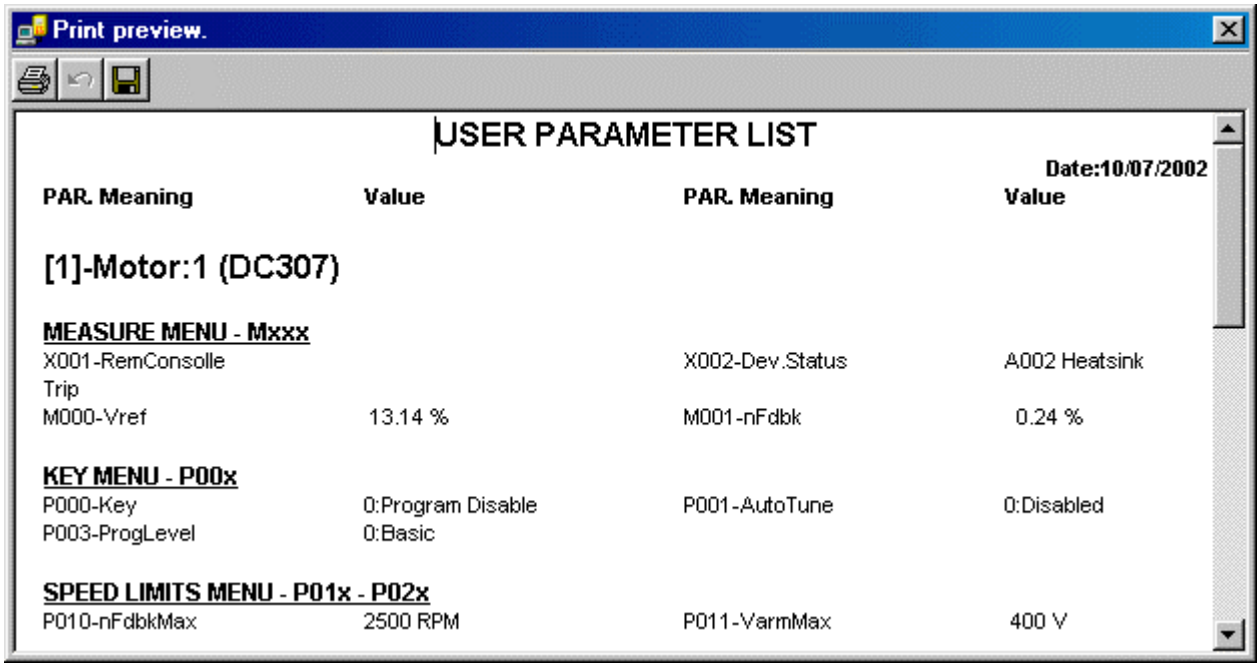
firmware download



MMI table download

1. In case of multidrop connection (RS485), only the device to be upgraded is to be left connected to the network.
2. Choose the right type of device and address.
3. Click "Send" or "Send tab". This commands check if the selected device type is valid and if the upgrade file complies with it. In this case, it sends a preliminary upgrade command to the device. The flash memory writing procedure is preceded by an erasing stage that will last a few seconds. This is controlled by a timeout procedure (see “Flash Erasing T.out") allowing to detect any interruption of this stage. When the timeout is over, if the erasing continues, the procedure will stop and a time-out message will be displayed.

5.21. Parameter Print Preview Window



The text can be modified, so you can enter some comments.

Prints the document contents.

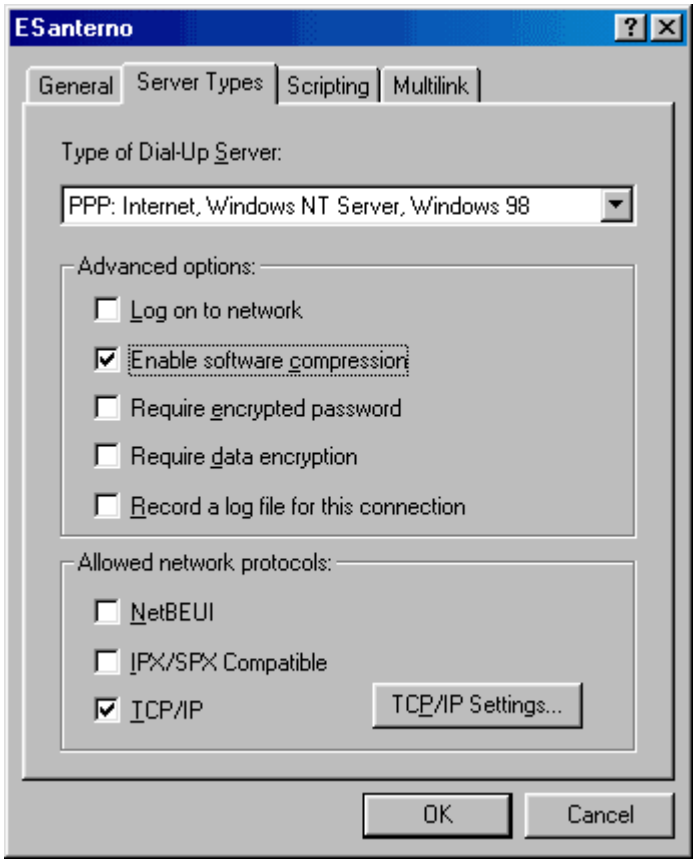
Saves the document contents to disk in RTF format.

6. O.S. CONFIGURATION FOR A CONNECTION TO EACH TERMINAL

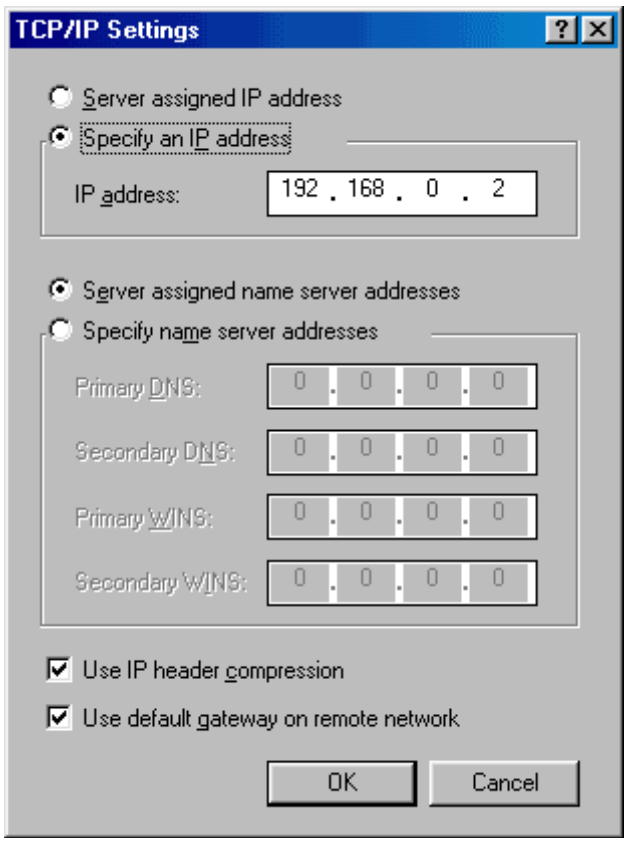
6.1. Windows 98

6.1.1. CLIENT:

Create a new connection from the remote access window: Make New Connection enter the telephone number of the modem that will be called.
Access the connection properties and set the "Type of servers" window as follows:

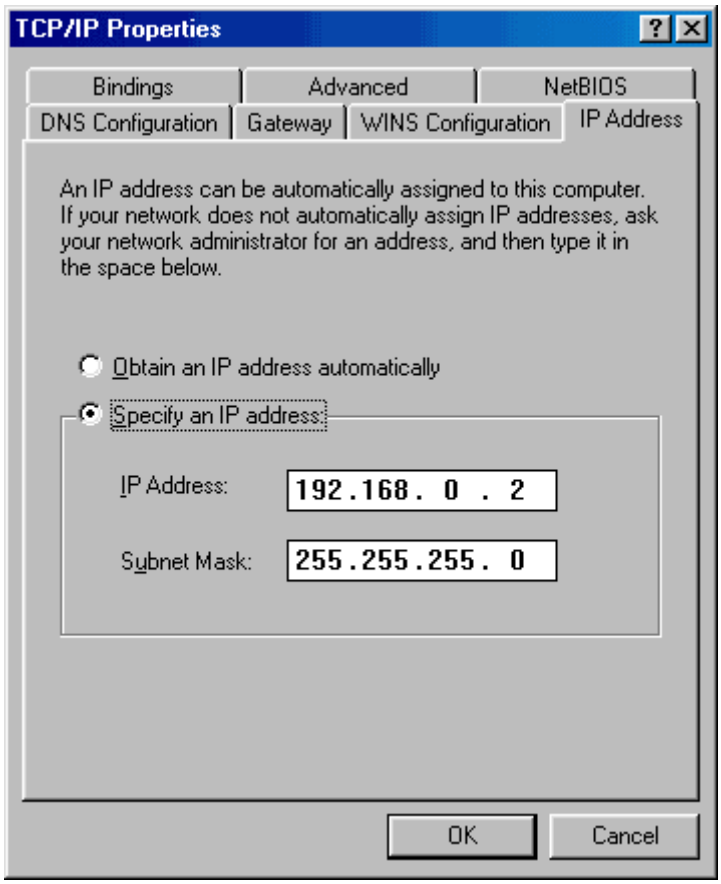


set the "TCP/IP Settings" as follows:

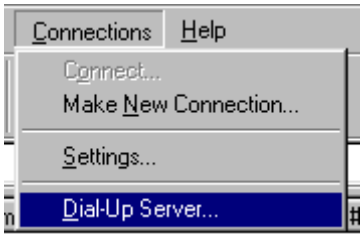


6.1.2. SERVER:

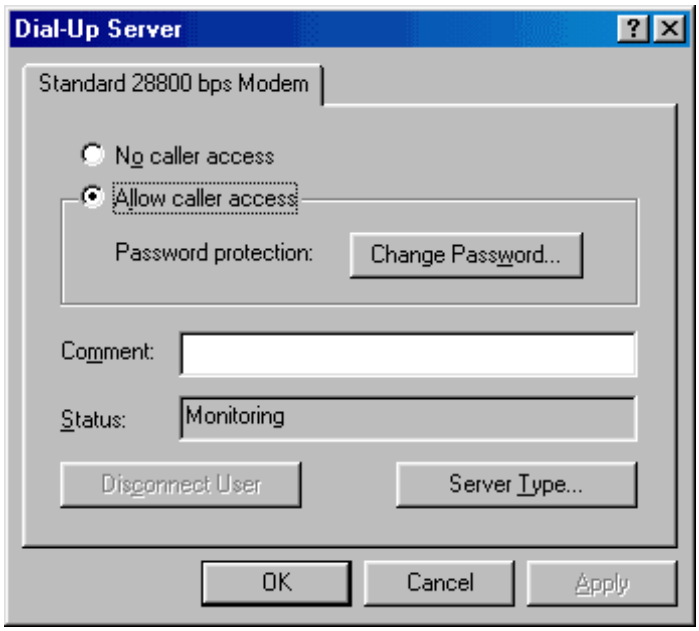
From the network configuration window, switch to the properties of the TCP/IP protocol for the remote access device and set as follows:



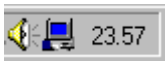
from the remote access window, choose the following:



enable the remote access server:



the icon in the bottom-right corner means that the remote access server is active and is ready to be called.



6.2. Windows XP

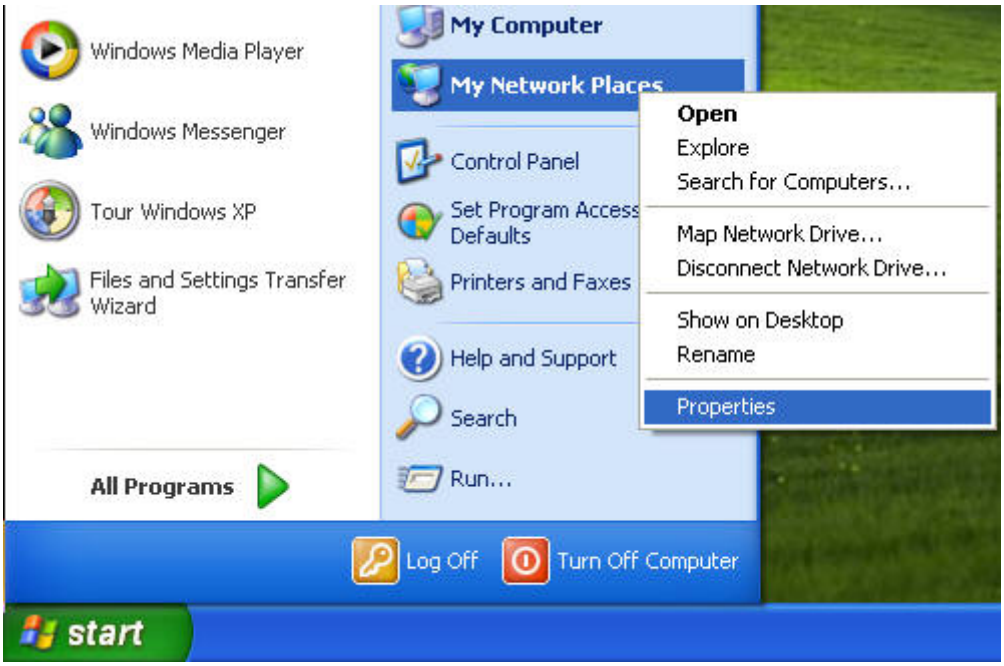
6.2.1. CLIENT:

When using Win98, WinMe, Win2000 and WinXP, you can connect the client to an XP server computer or an ES851 Data Logger selecting the 'First connect to' option and displaying the Remote access configuration window directly from the Remote Drive (see section First Connect to). Also, you can use the same connecting procedure allowing to access the Internet via analog modem without changing the default settings of the operating system.
Your username and password must be the same as the ones entered for your account authorizing incoming calls to the server computer.

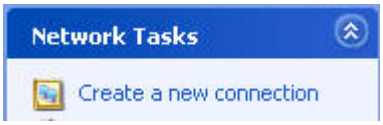
NOTE If you are asked to enter the domain name, leave blank.

6.2.2. SERVER:

From the Start menu, choose:

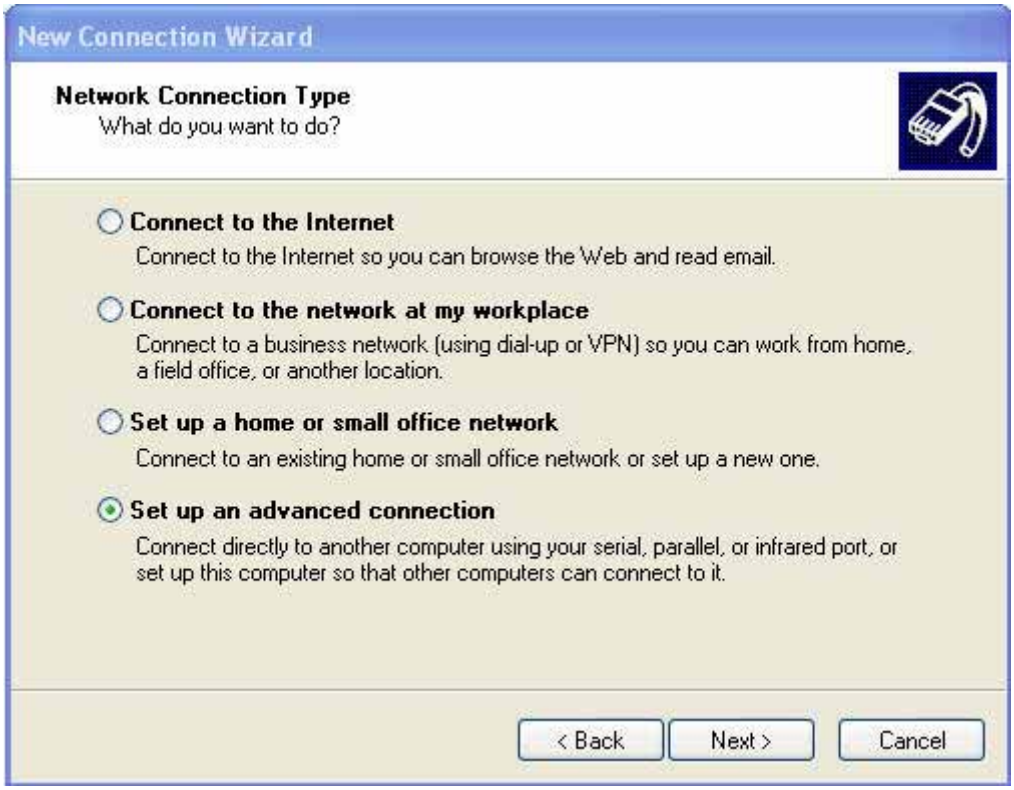


To open the "Network Connections" window, create a new connection using:



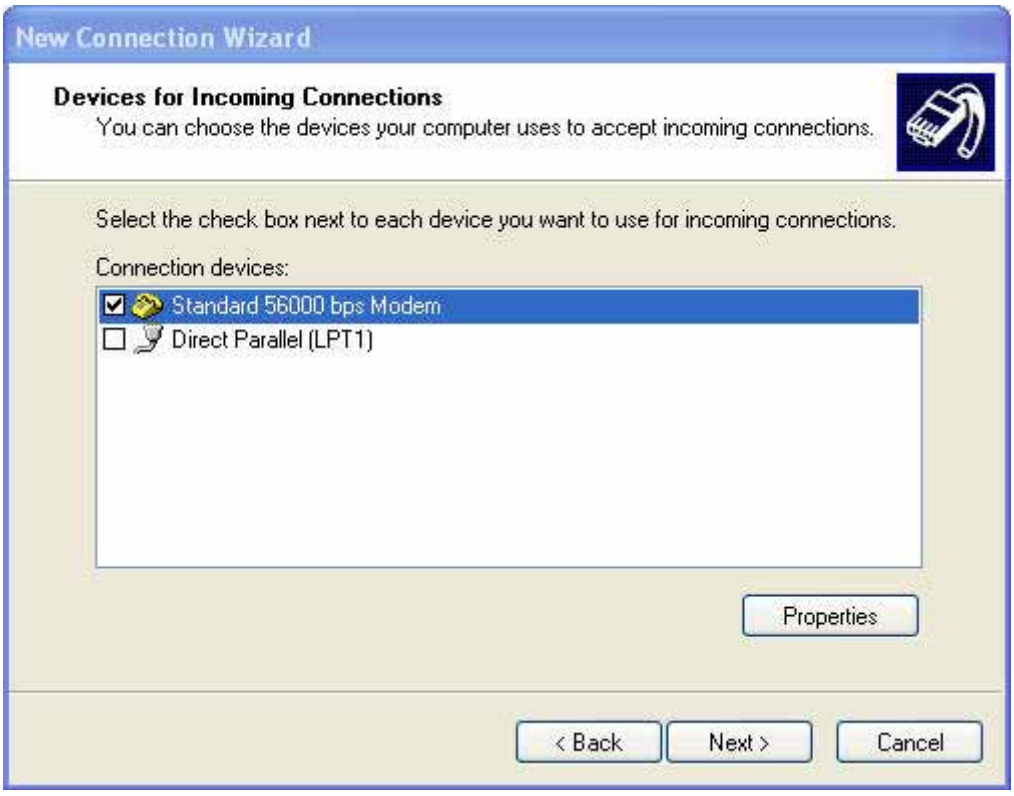
New Connection Wizard
Welcome to the New Connection Wizard
This wizard helps you:
• Connect to the Internet.
• Connect to a private network, such as your workplace network.
• Set up a home or small office network.
To continue, click Next.
< Back
Next >
Cancel

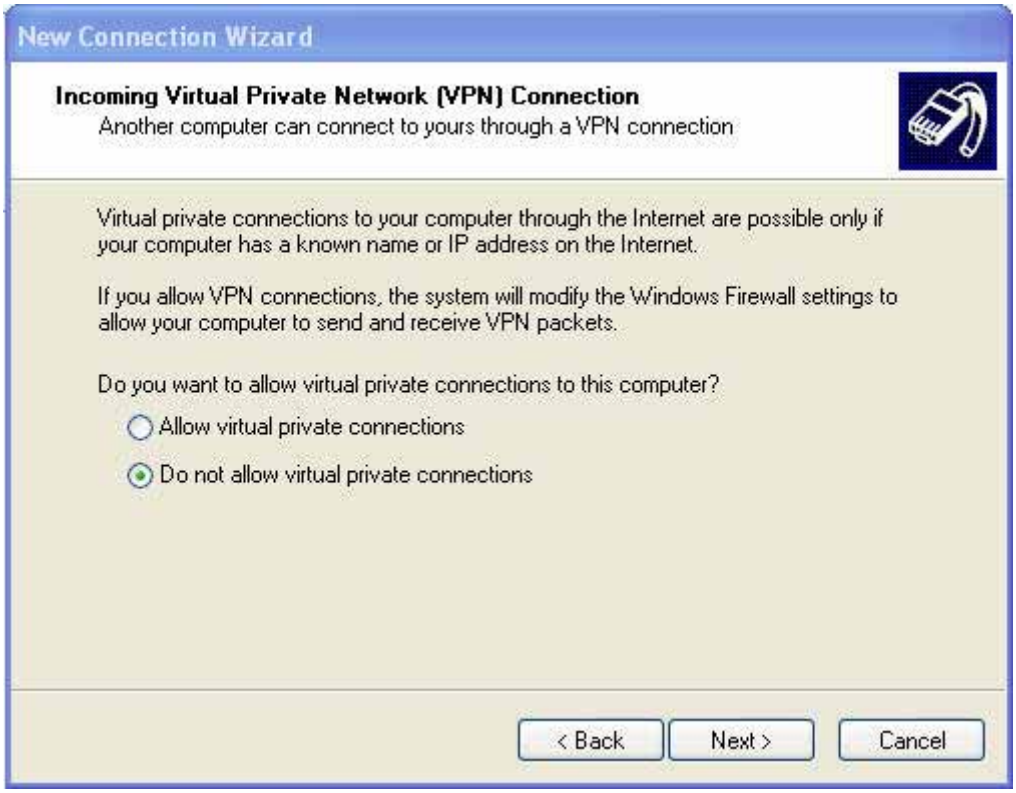
Then set as follows:


New Connection Wizard
Network Connection Type
What do you want to do?
Connect to the Internet
Connect to the Internet so you can browse the Web and read email.
Connect to the network at my workplace
Connect to a business network (using dial-up or VPN) so you can work from home, a field office, or another location.
Set up a home or small office network
Connect to an existing home or small office network or set up a new one.
Set up an advanced connection
Connect directly to another computer using your serial, parallel, or infrared port, or set up this computer so that other computers can connect to it.
< Back
Next >
Cancel

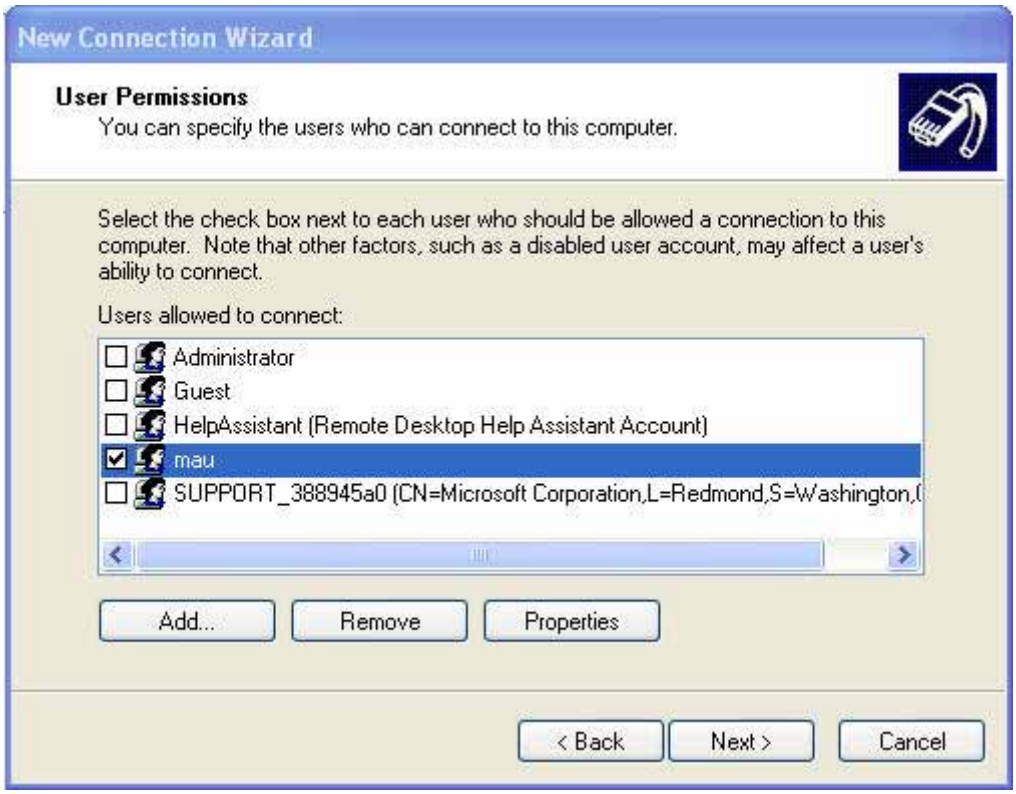
New Connection Wizard
Advanced Connection Options
Which type of connection do you want to set up?
Select the connection type you want:
Accept incoming connections
Allow other computers to connect to this computer through the Internet, a phone line, or a direct cable connection.
Connect directly to another computer
Connect to another computer using your serial, parallel, or infrared port.
< Back
Next >
Cancel

Select the modem for incoming calls

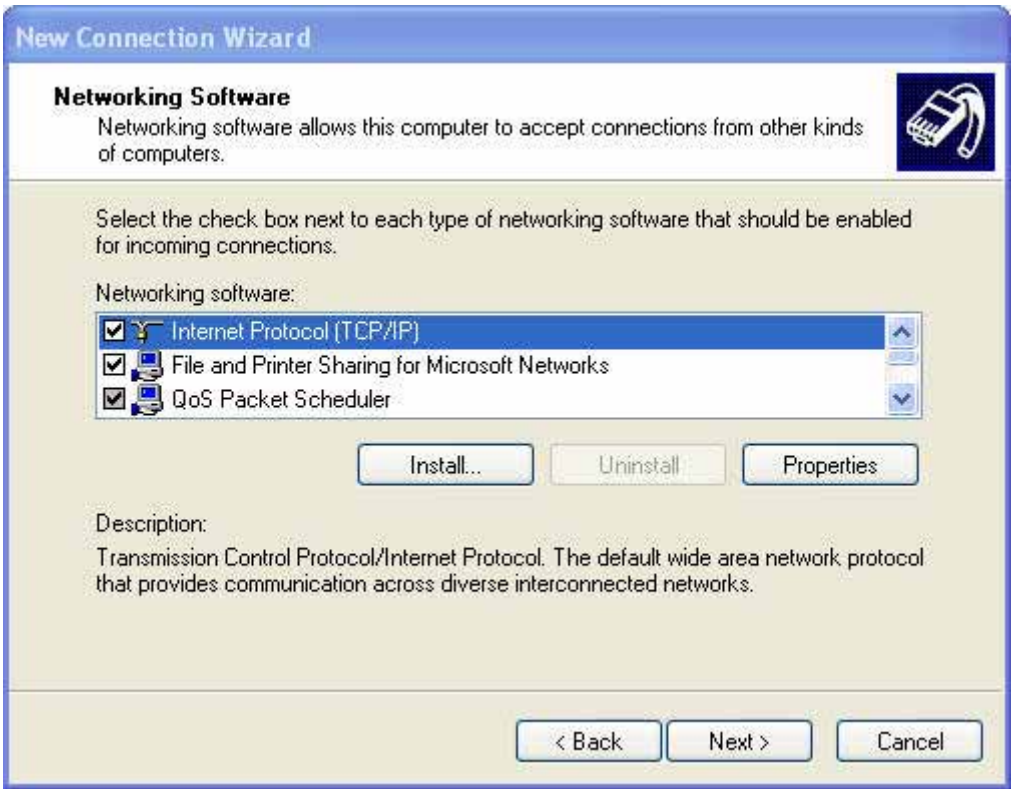

New Connection Wizard
Devices for Incoming Connections
You can choose the devices your computer uses to accept incoming connections.
Select the check box next to each device you want to use for incoming connections.
Connection devices:
Standard 56000 bps Modem
Direct Parallel (LPT1)
Properties
< Back
Next >
Cancel


New Connection Wizard
Incoming Virtual Private Network (VPN) Connection
Another computer can connect to yours through a VPN connection
Virtual private connections to your computer through the Internet are possible only if your computer has a known name or IP address on the Internet.
If you allow VPN connections, the system will modify the Windows Firewall settings to allow your computer to send and receive VPN packets.
Do you want to allow virtual private connections to this computer?
Allow virtual private connections
Do not allow virtual private connections
< Back
Next >
Cancel

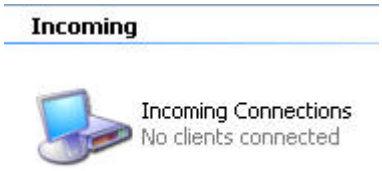
Select or add the user the client computer shall connect to; if no user is authorized, no incoming connection will be enabled.


New Connection Wizard
User Permissions
You can specify the users who can connect to this computer.
Select the check box next to each user who should be allowed a connection to this computer. Note that other factors, such as a disabled user account, may affect a user's ability to connect.
Users allowed to connect:
Administrator
Guest
HelpAssistant (Remote Desktop Help Assistant Account)
mau
SUPPORT_388945a0 (CN=Microsoft Corporation,L=Redmond,S=Washington,
Add...
Remove
Properties
< Back
Next >
Cancel

No additional data is required in the "Network Software" section, because enough default settings are provided.


New Connection Wizard
Networking Software
Networking software allows this computer to accept connections from other kinds of computers.
Select the check box next to each type of networking software that should be enabled for incoming connections.
Networking software:
Internet Protocol (TCP/IP)
File and Printer Sharing for Microsoft Networks
QoS Packet Scheduler
Install...
Uninstall
Properties
Description:
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
< Back
Next >
Cancel

New Connection Wizard
Completing the New Connection Wizard
You have successfully completed the steps needed to create the following connection:
Incoming Connections
The connection will be saved in the Network Connections folder.
To create the connection and close this wizard, click Finish.
< Back
Finish
Cancel



When configuration is complete, will appear in the "Network Connections" window, to indicate that the computer can receive incoming calls.
An icon with the username of the connected user indicates an incoming connection: